



# County of Los Angeles CHIEF EXECUTIVE OFFICE

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Chief Executive Officer

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Fifth District

October 17, 2012

To: Supervisor Zev Yaroslavsky, Chairman  
Supervisor Gloria Molina  
Supervisor Mark Ridley-Thomas  
Supervisor Don Knabe  
Supervisor Michael D. Antonovich

From: William T Fujioka  
Chief Executive Officer

## COUNTY PRIVATE CLOUD COMPUTING (ITEM 22-A, AGENDA OF SEPTEMBER 25, 2012)

On September 25, 2012, the Board on the motion by Supervisor Antonovich, instructed the Chief Executive Office (CEO), in collaboration with the Chief Information Officer (CIO) and the Director of the Internal Services Department (ISD), to report on the following items:

1. An overall status report from all County departments using the County's private cloud for email, including cost-savings of using the system, number of hours of down time due to crashes, number of employees using the system, number of staff maintaining the system, number of emails sent, etc.;
2. What other services besides email the County plans to place on its private cloud network in the future and the expected timeline;
3. An update on the progress of consolidating the County's data centers into the cloud system;
4. Whether the County has placed, or will place in the future, confidential information on the private cloud network (i.e., eCAPS, foster youth, Sheriff and District Attorney [DA] databases), and what security protocols will be followed for accessing that information; and

*"To Enrich Lives Through Effective And Caring Service"*

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5. How the County's private cloud network will benefit from Supervisor Antonovich's prior motion regarding countywide hyper-connectivity and increased internet speeds.

## **BACKGROUND**

In 2010, ISD developed a new service model that involved the shared use of server, storage and network technology. The County's eCloud model is similar to the public cloud as it is designed to share a common infrastructure and through server virtualization, the merger of many server computers onto one larger server, enable faster server deployment, improved security, disaster recoverability, and availability at a significantly lower cost per server than the prior server configuration model.

Since eCloud was implemented into full production in July 2011, ISD has been progressively moving all hosted systems onto the new platform as part of the normal process to replace obsolete server hardware. Attachment I lists departments and examples of systems hosted on eCloud.

Effective July 2012, all new server requests to ISD are being hosted in the County eCloud environment. The eCloud service model has resulted in rate reductions for ISD-hosted servers ranging from 27% to 66% based on their size (i.e., processor and memory capacity).

## **COUNTYWIDE EMAIL SYSTEM**

The ISD-managed countywide email system has operated in a virtualized infrastructure since March 2012 providing email services for 16 departments. ISD is currently in the process of adding the Department of Health Services' 18,000 email accounts, with the migration targeted for completion by the end of 2012. Once completed, the mailbox count for the solution will be over 37,000 users. This countywide email system environment has not experienced any down time as a result of an eCloud infrastructure failure. The countywide email system currently averages over 380,000 messages a day and is managed by four full time staff and a supervisor. Attachment II details the current and planned departmental adoption of countywide email.

Expansion of the countywide email system customer base will allow the cost-per-user to be reduced from \$10.00 per month to \$6.30 after completion of DHS' migration by December 2012. For DHS, this is estimated to be a monthly cost savings of \$6.30 per user (a 50% savings) compared to DHS' existing email system. Individual departmental

savings will vary based on their existing email systems and related support and services costs (i.e., number of dedicated staff, whether archiving and e-Discovery capability is included, disaster recoverability, etc.). If all departments subscribe, countywide email system adoption is estimated to ultimately reduce the monthly cost per user to \$3.50, which is comparable to private sector cloud offerings. This figure includes the Sheriff's Department, which has requested a waiver from the centralized email project based on security concerns. We believe that security solutions are available to satisfy the Sheriff's concerns and that the Sheriff remains a suitable candidate for centralized email. Specifically, eCloud utilizes the same technology as outside vendors, but it is hosted on the secure County-owned network and equipment. Also, the County's policy of performing Livescan background checks on each employee allows for much easier accreditation and 100% security compliance for employees. Other public safety jurisdictions have migrated to centralized email systems, including the Florida Highway Patrol and the cities of Pittsburg, Des Moines, and Orlando.

### **DATA CENTER CONSOLIDATION**

The CIO has been leading efforts to increase the countywide virtualization of systems. The Board approved the use of \$1.45 million for this purpose in ISD's FY 2012-13 budget. With the deployment of eCloud, the CIO and ISD will work with departments that have yet to be virtualized and/or those which have a mission critical system, but lack an adequate disaster recovery solution, to consider using the County eCloud.

With the Board's concurrence and approval, the CEO and CIO will be issuing a directive for departments to migrate their servers into the County eCloud environment. The directive will include a statement indicating that virtualization and centralization reflects the County's strategic direction for data center management. Additionally, the directive will establish eCloud as the County's long-term virtual computing environment and the key component to the County's strategy for consolidated primary and disaster recovery data centers.

### **SECURITY AND PRIVACY OF THE PRIVATE CLOUD**

eCloud benefits from all of the security systems already in place to protect systems that are hosted in the Downey data center. This includes extensive use of firewalls to separate internal and public facing systems, use of Intrusion Prevention Systems to detect and block malicious network traffic, a robust software security patching solution, and 7 days a week/24 hours a day security monitoring. eCloud is designed to isolate departmental systems by the use of virtual data centers to prevent unauthorized access. Virtual data centers will also stop performance or security problems in one area from adversely affecting other areas.

The ISD data center currently hosts sensitive applications for Health Services, Mental Health, Public Health, and Probation. The data center is compliant with the Health Insurance Portability and Accountability Act (HIPAA) and Health Information Technology for Economic Clinical Health (HITECH).

Additionally, the Sheriff and District Attorney use the data center to process sensitive applications to support their operations such as:

- Consolidated Criminal History Reporting System (CCHRS)
- Modified Automated Process and Accounting System (MAPAS)
- Automated Justice Information System (AJIS)
- Prosecutors Information Management System (PIMS)

As the County moves forward toward a centralized data center environment, the County's Chief Information Security Officer will continue to work with ISD to ensure that eCloud meets or exceeds all regulatory security and privacy requirements.

### **FUTURE SERVICE MIGRATION TO THE PRIVATE CLOUD**

In alignment with the countywide virtualization and centralizations strategy, it is anticipated all standard server-based services will be moved to the eCloud platform as the host physical servers are virtualized and consolidated. These services and their associated software applications are currently being assessed by CIO and ISD staff for:

1. eCloud readiness;
2. The criticality of the service for the department's day to day operations and;
3. Priority of the service in the County's disaster recovery plan.

The results of the assessment will be used to create a project charter and timeline for virtualization and the ultimate migration of the services to the eCloud environment. As stated above, the Board has approved the use of \$1.45 million for the countywide virtualization effort in ISD's FY 2012-13 budget. This funding will assist departments in transitioning physical servers to the new virtual format. The CIO has established a tentative project deadline of June 30, 2014 for all servers to be virtualized.

## **POTENTIAL BENEFITS RELATED TO HYPER-CONNECTIVITY MOTION**

Hyper-connectivity, the concept of connecting everyone with everything using high-speed network connectivity, has many potential benefits in enhancing the delivery of electronic government services to constituents and information sharing between County agencies. There are also risks that such connectivity would introduce, such as information security and privacy risks.

By consolidating the County's systems in a single, private cloud environment, eCloud can help enable greater and more efficient delivery of e-government services in a hyper-connectivity scenario. eCloud also allows the County to manage the risks hyper-connectivity would introduce by operating under uniform information security and information management protocols.

The CEO and CIO are continuing to review the various aspects relating to hyper-connectivity including high-speed connectivity, data security, and availability as directed by the Board on September 18, 2012, with a 45-day report back.

If you have any questions, please contact Ellen Sandt at (213) 974-1186 or [esandt@ceo.lacounty.gov](mailto:esandt@ceo.lacounty.gov).

WTF:EFS:  
SW:cg

### Attachments

c: Executive Office, Board of Supervisors  
County Counsel  
Information Technology Board Deputies  
Chief Information Office  
Internal Services

## eCloud Hosted Departments

Total number of virtual servers as of October 2012: **1013**

Total number of ISD hosted servers scheduled to be migrated to eCloud between October-June 2013: 250

Departments (with example applications) hosted:

- ACWM – Horizon Laboratory Information Management System (LIMS); LIMS Scientific Data Management Systems (SDMS)
- Assessor – Department Website; Property Tax Portal redirector; Assessor Maps
- Auditor – eCAPS; eHR; Documentum Project
- Beaches and Harbors – Department Website; Department Intranet Website; Navision Financials
- BOS – Board Video Web; Online Filing Form 700; Assessment Appeals Board
- CIO – Business Continuity; Enterprise Foundstone;
- Coroner – Case Management Systems (CMS); Electronic Case File System (ECFS)
- CSS – Summer Youth Employment
- DCFS – Child Care KinderTrack; LAKIDS; CCSAS Applications; Global 360; Visual Source Safe; SAS; Welfare Case Management Information Systems (WCMIS); Child Protection Hotline; ITRACK
- DHR – Department Internet and Intranet Websites; Countywide Discipline System; Performance Mgmt Tracking System; Learning Management System (LMS); Countywide Career Opportunities Administration;
- DHS – Enterprise mHUB; Medi-Cal Revenue Recovery; Health Care Online Requisition; GHX-eCAPS; Children's Health Outreach Initiative
- DMH – Integrated Systems (DMHIS); Altiris; Citrix; JJIS and Day Treatment Authorization; OWA; Service Catalog; Captaris
- DPH – CMS e-Chart ECM; CHOI; Substance Abuse Prevention & Control Community Information Systems (SAPCCIS)
- DPSS – Department Web Portal; COGNOS; Call Service Center (CSC); APEX; Online Eligibility Applications; EDMS
- DPW – Department Website; McAfee EMM Proxy; Map Server
- Fire – Fire Dept and Coastal Monitoring Network Websites; InterOp
- ISAB – CCHRS; Drug Court Management Information Systems
- ISD – Department Website; Service Inventory Management System; ITSS Exchange & File Print Services; CRM; ECM; SharePoint; FAMIS; SMS; Security apps; VoIP; eGIS

**eCloud Hosted Departments**

- Superior Courts – WebCourt; JSD Financial Reporting System (FRS); Juvenile Automated Index Reports; JADE Jury Master
- Library – Integrated Library System (ILS)
- Parks & Rec – Department Website
- Planning – Department Website; Web Streaming; Map Server
- Probation – PCMS; PEDMS; Asset Management; JJCPA; KIOSK Report-In System; Exchange; Internet and Intranet OWA
- Registrar Recorder – Department Website; LAVote.net; Birth, Death, & Marriages; Election Results; Vital Records; Real Estate Records
- Treasure Tax – CAMS; Property Tax Portal; TeCOPS
- Sheriff – LASD LockBox; Case Inquiry

**Tentative Migration Schedule for Countywide E-mail Service (CES)**

| <b>Departments</b>             |  | <b># Mail Boxes</b> |
|--------------------------------|--|---------------------|
| <b>CURRENT CES DEPARTMENTS</b> |  |                     |
| Animal Care & Control          |  | 220                 |
| Alternate Public Defender      |  | 350                 |
| Beaches and Harbors            |  | 225                 |
| California Children Services   |  | 76                  |
| Chief Executive Office         |  | 695                 |
| Chief Information Office       |  | 30                  |
| Community and Senior Services  |  | 630                 |
| Consumer Affairs               |  | 95                  |
| Coroner                        |  | 250                 |
| DCFS                           |  | 7,446               |
| Dept. of Human Resources       |  | 430                 |
| Internal Services Department   |  | 2,600               |
| Military and Veteran's Affairs |  | 25                  |
| Office of Emergency Management |  | 60                  |
| Probation                      |  | 6,355               |
| Regional Planning              |  | 180                 |
| <b>TOTAL CURRENT</b>           |  | <b>19,667</b>       |

| <b>PHASE 1 - FISCAL YEAR 12-13</b>   | <b>Start - End</b>  | <b># Mail Boxes</b> |
|--------------------------------------|---------------------|---------------------|
| DHS *                                | Jul 2012 - Jan 2013 | 18,000              |
| Registrar-Recorder/County Clerk *    | Nov 2012 - Jan 2013 | 854                 |
| Parks and Recreation *               | Jan - Jun 2013      | 906                 |
| Public Defender *                    | Jan - Jun 2013      | 1,218               |
| Information Systems Advisory Board * | Jan - Jun 2013      | 6                   |
| Auditor Controller *                 | Jan - Jun 2013      | 772                 |
| <b>TOTAL PHASE 1</b>                 |                     | <b>24,281</b>       |

| <b>PHASE 2 - FISCAL YEAR 13-14</b> | <b>Start - End</b>  | <b># Mail Boxes</b> |
|------------------------------------|---------------------|---------------------|
| Agricultural Commissioner W&M      | Jul 2013 - Jun 2014 | 322                 |
| Assessor                           | Jul 2013 - Jun 2014 | 1,486               |
| County Counsel                     | Jul 2013 - Jun 2014 | 610                 |
| Fire Department                    | Jul 2013 - Jun 2014 | 4,555               |
| Mental Health                      | Jul 2013 - Jun 2014 | 5,307               |
| Public Works                       | Jul 2013 - Jun 2014 | 3,500               |

**Tentative Migration Schedule for Countywide E-mail Service (CES)**

|                                    |                     |                     |
|------------------------------------|---------------------|---------------------|
| Treasurer/Tax Collector            | Jul 2013 - Jun 2014 | 525                 |
| Public Health                      | Jul 2013 - Jun 2014 | 6,123               |
| Public Library                     | Jul 2013 - Jun 2014 | 1,400               |
| <b>TOTAL PHASE 2</b>               |                     | <b>23,828</b>       |
|                                    |                     |                     |
| <b>PHASE 3 - FISCAL YEAR 14-15</b> | <b>Start - End</b>  | <b># Mail Boxes</b> |
| District Attorney **               | Jun 2014 - Jul 2015 | 2,300               |
| Public Social Services             | Jun 2014 - Jul 2015 | 13,100              |
| <b>TOTAL PHASE 3</b>               |                     | <b>15,400</b>       |

|                                    |                     |                     |
|------------------------------------|---------------------|---------------------|
| <b>PHASE 4 - FISCAL YEAR 14-15</b> | <b>Start - End</b>  | <b># Mail Boxes</b> |
| Sheriff ***                        | Jan 2015 - Aug 2015 | 27,740              |
| <b>TOTAL PHASE 4</b>               |                     | <b>27,740</b>       |

|                    |  |                |
|--------------------|--|----------------|
| <b>GRAND TOTAL</b> |  | <b>110,916</b> |
|--------------------|--|----------------|

\* Discussion underway for conversion within this fiscal year.

\*\* CLETS regulatory compliance needs to be confirmed.

\*\*\* Sheriff has requested an exemption from participation in CES.