

A Small Cloud in State Government

The story of Office of Administrative Hearings successful cloud computing implementation and how it is helping OAH be successful in its business.



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Who & What is OAH

OAH Mission – *To hold fair and independent hearings for the public and for government agencies, and to issue quality and timely decisions.*

History – The Washington State Legislature created OAH in 1981 to eliminate perceived bias when administrative law judges belong to the same agency.
“Hearings shall be conducted with the greatest degree of informality consistent with the fairness and the nature of the proceedings.” RCW 34.12.010

Organization:

- Field offices in Olympia, Seattle, Spokane, Vancouver, & Yakima
- 130 Administrative Law Judges
- 72 Admin. & Support Staff



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Who & What is OAH

OAH conducts hearings for 30 state & local government agencies including:

- Employment Security Department
- Department of Social and Health Services
- Department of Early Learning
- Labor & Industries
- Office of the Superintendent of Public Instruction

OAH takes pride in the high volume of cases it brings to decision every year.

Fiscal Year	No. Cases Received	No. Cases Closed
2008	47514	47473
2009	58553	55229
2010*	63459	61270

* Through May, 2010



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Business Technology Issues

There were several technology issues:

- PC Refresh – 3 years for systems. \$300,000 & time to configure
- Workstation configuration – each workstation is “unique”
- Data security – data was everywhere
- Version control – various versions of software existed everywhere
- Software distribution – every upgrade had travel & logistical issues, licensing issues, & illegal software
- Help Desk – calls averaged 25 per day, time to resolve help calls was 1-2 weeks, & each fix was a separate fix. As a result, 4-5 techs were needed.
- Mobile & Remote Access – VPNs difficult to use & poor performance
- No workstation sharing – Each workstation belonged to a user and was unique to that user



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Wait, There's more...

There were several system issues:

- Extensive use of old & outdated database systems, e.g., Paradox, SQL 6.5
- Extensive use of old software, e.g., WordPerfect, Quattro Pro
- Wide variety of peripherals
- Little or no security

There were agency culture issues:

- IT was the “*red-headed step child*”
- Little or no reliable IT funding
- Too many user developed solutions that were institutionalized
- Little or no IT leadership



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What me worry?



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Some thoughts towards a solution

“People who don’t take advantage of the crisis to cross over to a new model, are wasting the crisis.”

- Michigan Governor Jennifer Granholm

“We can't solve problems by using the same kind of thinking we used when we created them.”

- Albert Einstein

“Cloud computing comes into focus only when you think about what IT always needs: a way to increase capacity or add capabilities on the fly without investing in new infrastructure, training new personnel, or licensing new software. Cloud computing encompasses any subscription or pay-per-use service that, in real time over the Internet, extends IT’s existing capabilities.”

- Infoworld article



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Misconceptions

There were plenty of “nay-sayers” that said OAH’s cloud would never work:

- You’ll need huge network pipes that will be cost prohibitive
- My special “old” applications will not work
- I will not get access to the applications that I need
- Printing is too much of a problem
- I need my applications and data on my laptop or computer
- I have a federal requirement that my data be on MY server
- You don’t understand, I need my data on my jump drive, it goes with me everywhere
- I have special needs
- What happens when the power goes out?

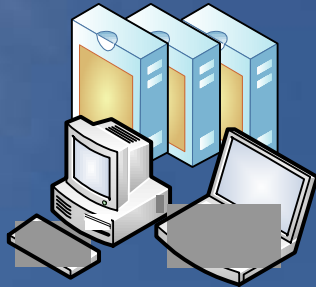


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Cloud Implementation

OAH formally started in Dec., 2007 to create its “small cloud”



Step 1. Analyze technical environment.

- Analyzed all agency software, computers, servers & networks. Understood importance, how they were used, who used them.
- Analyze user and office requirements. Understood remote access & mobile needs, daily business practices, and user roles & responsibilities.



Step 2. Planning

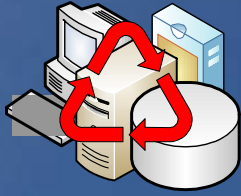
- Designed & built an implementation plan. Identified tasks, milestones, resources, timetable, and costs.
- Got buy-off and approval from business units. Presented plan, discuss risks & mitigation plan, and communications plan.



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Cloud Implementation

Step 3. Testing



- Acquired necessary equipment.
- Developed workstation thin-client image for various agency PC workstations.
- Tested to ensure design worked as per expectations. Once testing was completed full scale implementation began.

Step 4. Implementation



- Collapsed all regional servers, applications, and data into a centralized location. Built Cloud Infrastructure.
- Migrated user workstations from traditional client-server PC workstations to thin-client PC workstations.

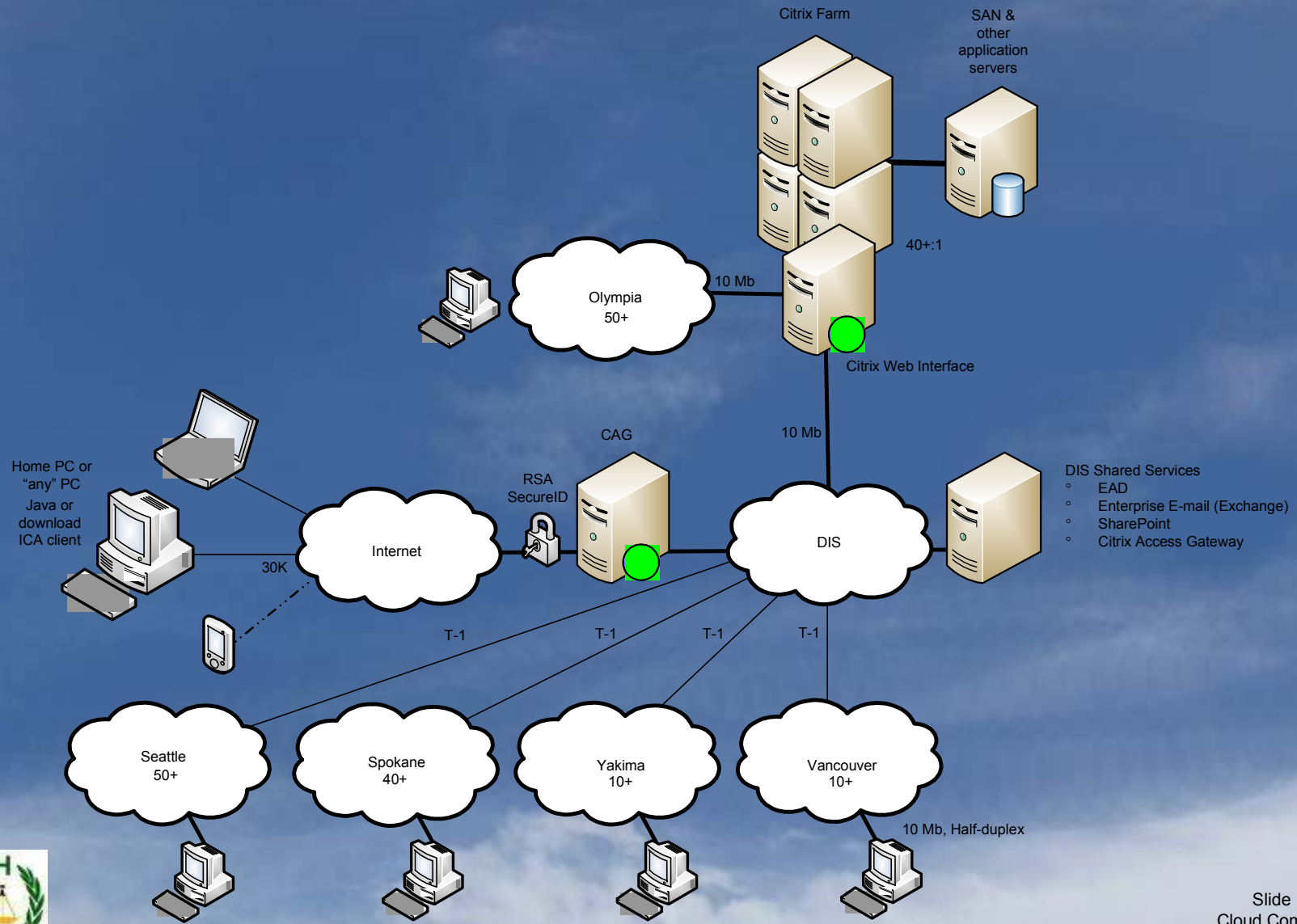


- **Step 5. Wrapped-up project** and conducted lessons-learned meeting. OAH Cloud completed August 2008.



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OAH Cloud



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Cloud Benefits

Item	Pre-Cloud	Post Cloud
Non-Standard Software	<ul style="list-style-type: none"> • Common problem • Interfered with applications 	<ul style="list-style-type: none"> • Not a problem - users cannot access • Only 'approved' apps available
Software Deployment*	<ul style="list-style-type: none"> • Travel to field offices • Typical upgrade took 2 weeks 	<ul style="list-style-type: none"> • No travel required • Upgrade takes < 1 hr.
Version Control	<ul style="list-style-type: none"> • Travel to field offices • Time consuming & difficult 	<ul style="list-style-type: none"> • No travel required - all staff have same version • Only 1 master list needs to be kept
Help Desk Troubleshooting	<ul style="list-style-type: none"> • Hard to diagnose & fix • Most help calls took > 1 week to resolve • Had 4+ FTEs on Help Desk 	<ul style="list-style-type: none"> • Easy to diagnose & fix • Most help calls resolved < 1 week • Have <1 FTE on Help Desk



Cloud Benefits

Item	Pre-Cloud	Post Cloud
PC Life-Cycle*	<ul style="list-style-type: none"> • 3 years for desktops • 2.5 years for laptops 	<ul style="list-style-type: none"> • 6-7 years for desktops • 5-6 years for laptops
Workstation Configuration*	<ul style="list-style-type: none"> • About 6 hours/workstation • Ea workstation is semi-unique • IT staff would deliver & setup 	<ul style="list-style-type: none"> • 30 min. per workstation • All configured same • Staff can “plug & play”
Data security	<ul style="list-style-type: none"> • Data was ‘everywhere’ • Staff took data with them 	<ul style="list-style-type: none"> • Centralized & secure data • Data always available
Mobile Computing	<ul style="list-style-type: none"> • Little or no remote access • Unsecure data 	<ul style="list-style-type: none"> • Teleworkers & remote workers are common. • Secure data



* Detail follows this slide

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Real Savings...



**Efficiency
&
Savings**

Support Calc Software Distribution Upgrade every 6 Months

Item	Pre-Cloud	Post-Cloud	Savings
User interaction to install update	10-15 min. per user, 50 users or 12.5 hours total	0 min.	12.5 hours of ALJ time saved
Technical interaction to install	12-16 hours.	3 hours	13 hours saved

**Efficiency
&
Savings**

PC Workstation Lifecycle

Item	Pre-Cloud	Post-Cloud	Savings
PC Desktop cost	\$800 * 140 workstations = \$112,000/3 years = \$37,333	\$112,000/7 years = \$16,000	\$21,333 per year (amortized)
PC Laptop cost	\$1,200 * 60 laptops = \$72,000 over 2.5 years = \$28,800.	\$72,000/6 years = \$12,000	\$16,800 per year (amortized)
Technical configuration	6 hours per PC * 200 = 1,200 hours.	30 min. per PC * 200 = 100 hours	1,100 hours saved (53% of an FTE)



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Real Savings...

**Efficiency
&
Savings**

PC Workstation (Laptop or Desktop) Delivery Increase of 45 employees across OAH

Item	Pre-Cloud	Post-Cloud	Savings
Technical interaction to install	270 hours (6 hours/PC)	22.5 hrs (30 min./PC)	247.5 hours saved
Tech required to travel (minimum)	12 hrs – Spokane 7 hrs. – Yakima 3 hrs. – Seattle 4 hrs. – Vancouver	0 hours	26 hours saved (minimum)
Travel costs (minimum)	\$323.20 (\$0.505/mi * 640 – Spokane RT) \$146 Lodging & Per diem \$163.62 (\$0.505/mi * 324 – Yakima RT) \$65.65 (\$0.505/mi * 130 – Seattle RT) \$25.00 Parking fee \$111.10 (\$.505/mi * 110 – Vancouver RT)	\$0 * PC workstations were shipped or transferred w/ existing visit	\$834.57 saved (minimum)



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Cloud Computing Enables Services

The VDI Implementation at OAH has allowed OAH IT to take advantage of the following DIS Shared Services easily & effectively:



Microsoft Enterprise Active Directory "State Forest"



Microsoft Office Outlook 2007

State-wide Enterprise E-mail



RSA SecureID

Access Gateway

Easy and secure desktop and application access from anywhere.



Citrix Access Gateway



Microsoft

SharePoint 2010

SharePoint Services

Using these shared services allows OAH to take advantage of economies of scale, share technical expertise, and provide better service to OAH employees.



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User Feedback...

What is NOT liked about the cloud:

- Can't use customized screen savers with nature or family pictures
- Can't save short-cuts to my desktop
- Can't customize my desktop with background pics or Google Apps
- Can't listen to music or audio

What IS liked about the cloud:

- Apps load fast
- Don't have to re-boot
- I always have access to my data & files – anywhere & anytime
- I can use any computer at work or at home
- Doesn't lock up or freeze as often
- Access to new apps is fast



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OAH Cloud Implementation

The Cloud Implementation at OAH has allowed OAH IT to accomplish the following items:

1. IT Help Desk reduced to 1 FTE per 202 employees.
2. Allowed IT Unit employees be re-directed to other critical agency IT projects (e.g. Web, Intranet/Internet, applications, database, etc.) versus providing Help Desk support.
3. Met 28% agency staff growth with no additional IT support.
4. Met ISB Security Standards version 4 in 2010.
5. Efficient and effective use of DIS Shared Services (e.g., EAD, E-mail, SharePoint).
6. Savings & efficient use of older PC technology.
7. Can easily meet technology initiatives such as Data Center Consolidation, HB 3178, etc.
8. Positioned for teleworking & other “green” solutions.



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Lessons Learned

Lessons Learned:

- ANALYZE & KNOW your current environment!
- Plan, plan, plan – set milestones & evaluate progress
- Be thorough in testing – use test criteria, varied user groups, test & test again
- Be committed to the above items.
- Train & educate your users on what they can expect
- Don't "skimp" on your core cloud computing infrastructure – servers, SAN, & memory
- Have commitment from your management
- Don't approve exceptions



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Thank you.
Questions? Comments?



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