SPIRITVICTORY

Output management services

VPSX®

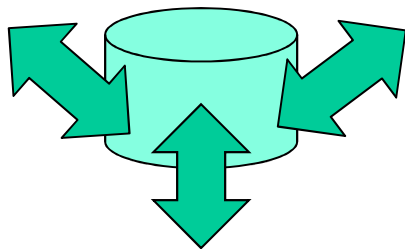# Output Management
Disaster Recovery Experiences

DRP Team Briefing

Information & Technology Division
Enterprise System Products, Output Management Team
Michael Sutton EDP Team Lead

Output Management

August 24, 2016

Briefing

- A little about the Output Management team
- Short discussion on VPSX and other OMS systems
- Our approach to recovering these systems
- Some Technical notes on Service Names & Utilities
- Things you need to do before going to 60 Tiffield
- Our experiences at 60 Tiffield
    - Failure is a great teacher
    - Getting Client Buy-In
- Some Post-Mortem recommendations

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Output Management

Enterprise ~~Print~~ OUTPUT MANAGEMENT

Actually a complete misnomer...

- Small team, part of TIS Enterprise System Products
- Mandate for high end, specialty document processing and composition [if it's weird, we do it in essence…]
- Won an IT Service Award in 2015 vs. 39 other teams
- More about electronic documents, composition, portalization, than print
- Recently upgraded to the VPSX Output Management System
  - InfoPrint Manager [IPM] not being supported by *Ricoh*
  - Interfaces to SAP and Provincial Mainframe built-in
  - VPSX has IPP and Java Open System support, filters, etc. etc.
  - VPSX has built-in DRP cloning capability, IPM didn't
- Just ran our 5th DRP Exercise at Tiffield [using automated hot sparing]
- Now handling Provincial File Transfer as well
- Some key clients: SAP, Pensions, PTMS, Permits, Court Services et al

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What we *really* do…
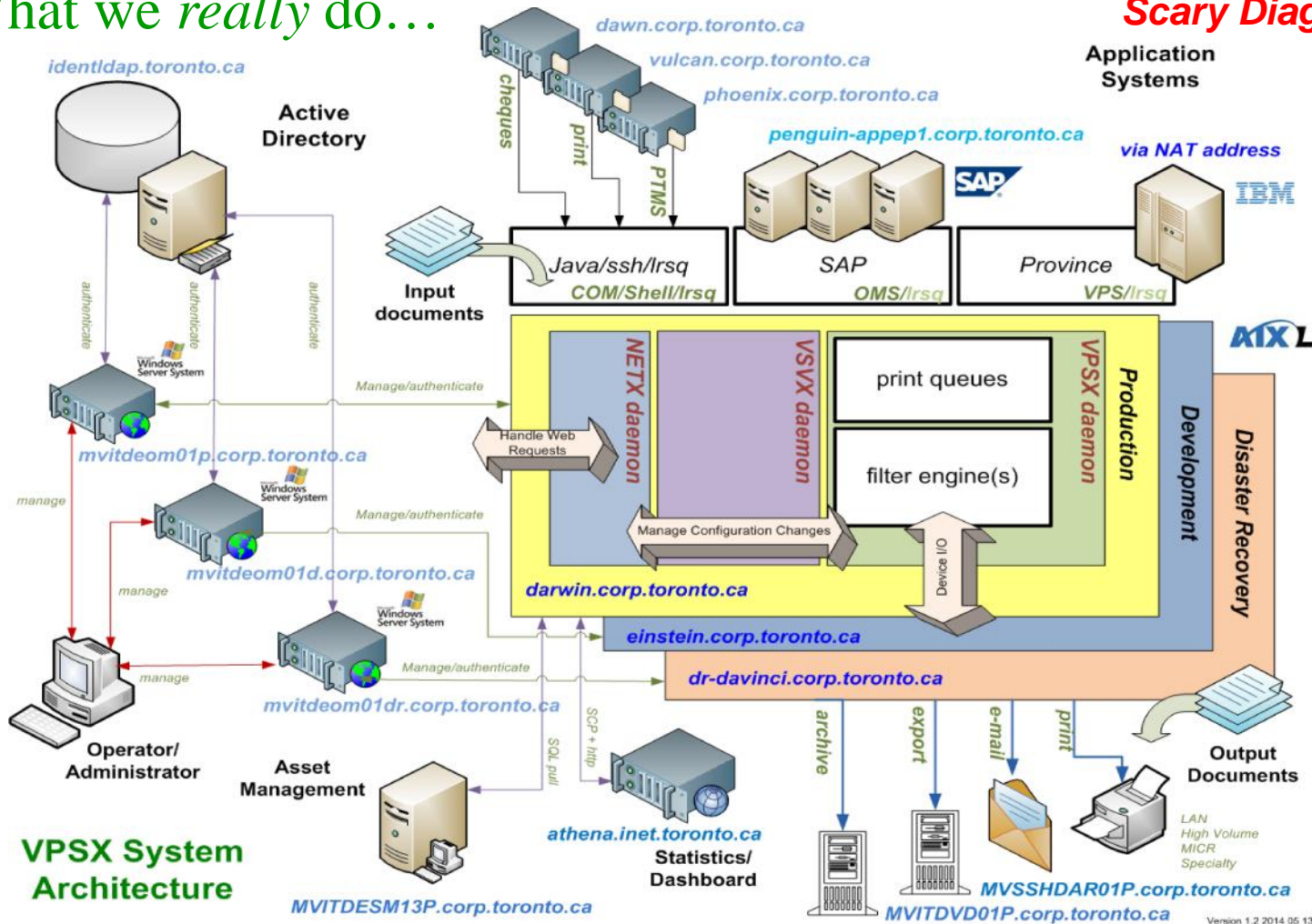
VPSX System Architecture

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Our DRP Process

- *VPSX* Output Management system consists of:
    - primary AIX spooling system: *darwin.corp.toronto.ca*
    - Windows VM management system: *mvitdeom01p.corp.toronto.ca*
- Our weekend *vpsx_recycle* batch job runs early Sunday morning
    - takes seven minutes to clone config items to Tiffield AIX system
    - ensures Tiffield DRP VM components are present and working
- Use *rsync* and *ssh* utilities extensively
    - carefully selects and verifies config objects are synchronized
    - creates "hot spare" situation
    - *VPSX* on *dr-davinci.corp.toronto.ca* ready to go but *quiesced*
    - Windows VM on *mvitdeom01d.corp.toronto.ca* ready to go
    - *rsync* great for system synchronization, but *rules can be picky!*
- We learned from our previous IPM experience
- Could be run more often, *on-call* process

30s Production Outage

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Bringing it Active

VPSX®

- *Hot Sparing:* AIX/VM complex at Tiffield is a quiesced clone of 703 Don Mills
- Recovery process is to bring VPSX on AIX/VM complex active *then*
    - Swap CNAME service name alias pointers on DNS system
    - Swap NAT address pointers on router system [for Province]
- No other copying, database replication, etc. etc. etc. is required
- Got to keep it stupidly simple during a contingency, don't know who is available for the restart process
- Simple as running *vpsx_init* command
- Can be up in under half an hour
or less [depending on Network team]

KISS

Keep. It Simple. Stupid.

Disaster Recovery Plan

TIME TO PLAN

CLONES
ARE PEOPLE TWO

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A Quick Word on using *Service Names vs. Server Names*

- Utilizes the ***Domain Name Service [DNS]*** canonical name [CNAME] alias facility
- If you rely on strictly using *Server Names* during a contingency…
    - you will need to change City applications to point to the new DR Server
    - some applications that are hard-coded will require developer changes
    - developers, coders, compilers, development systems, and/or change tools may be missing in a contingency
    - certain changes may be *impossible* in a contingency, app *stays broken*
    - Use *Service Name* to point to service, CNAME points to current server in DNS

DNS DOMAIN NAME SERVICES

vpsx_prod_spool_eprint.toronto.ca CNAME dr-davinci.corp.toronto.ca

- Some gotchas: ***DNS*** refresh, ***Java*** container reload, ***ssh2*** *known_hosts* reload
- notable differences between starting fresh in a contingency vs. DRP evaluation

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Using Synchronization Utilities

rsync

- Available as freeware on most operating systems
- Can run under **ssh2** [need keys, and special **userid**]
- Will run with compression [quick!]
- Does version control i.e. only pick what was *updated* or *changed*
- Recommended when **sftp/scp** aren't appropriate [e.g. more than one file]
- good for masking files to pick
- *Exclusion/Inclusion* rules can be very tricky to code!

ssh2

- Available as freeware on most operating systems
- **CopSSH** works well on Windows VM
- Need keys and special **userid**
- Good when you need to make minor adjustments on DRP system
- You can run local scripts remotely i.e. keep all DRP code on Production
- Best way to synchronize between Production and DRP systems by far!
- Production system can organize DRP as necessary remotely via automation
- All data moves are encrypted!
- No *passwords* required!

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Before Going to Tiffield…

- You will need to put a *Change Order* in, since *Production* is going to be affected!


- Inform all your clients weeks ahead
    - make sure they have someone available, and can do a proper evaluation i.e. going to a local Court counter, print real cheque or permit
    - find a date most clients are available, as well as IT technical staff [i.e network, platform, et al]

- stress the need for *Business Continuity* evaluations
- DRP is just as important to the client's own workplan objectives for their *Line-of-Business* [LOB]
- should get good buy-in based on this!
- don't "go to the trough" too often, twice a year is good

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@Tiffield…

- Make sure you have a few copies of your plan in hardcopy!
- Make sure you have *all* contact numbers, Clients *and* Technical!
- Make sure you co-ordinate with team on rides, getting there at same time
- Make sure you have an *objectives checklist* [*DRP Team* will provide and assist on its preparation!]
- Remind all contacts by e-mail *working day before!*
- Phone all your technical contacts i.e. Network, Platform *before you leave*
- Check you access badges:
  - at parking access
  - getting into Building B
  - biometrics access if you need it
- Things won't go perfect, don't be afraid of failures, be ready to take *red pen* to your plan!
- Bring food and drink, raiding the *Water Supply* fridge has proved fruitless in the past!
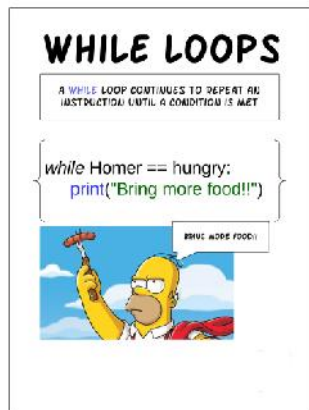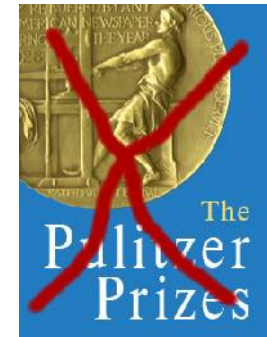
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20.5 KM Northeast!
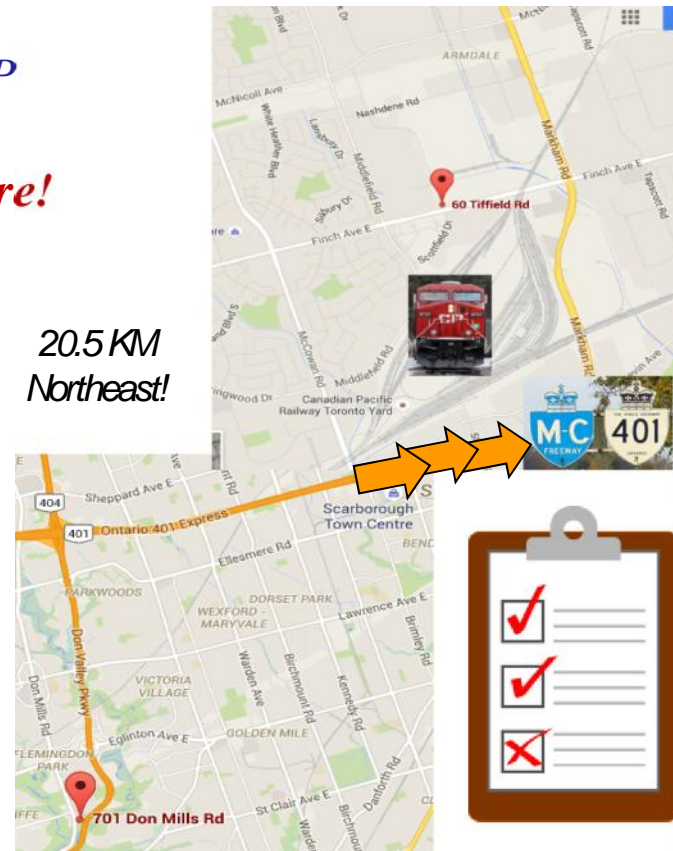
SCM's View of Court Services [alone]   *Scary Diagram #2*

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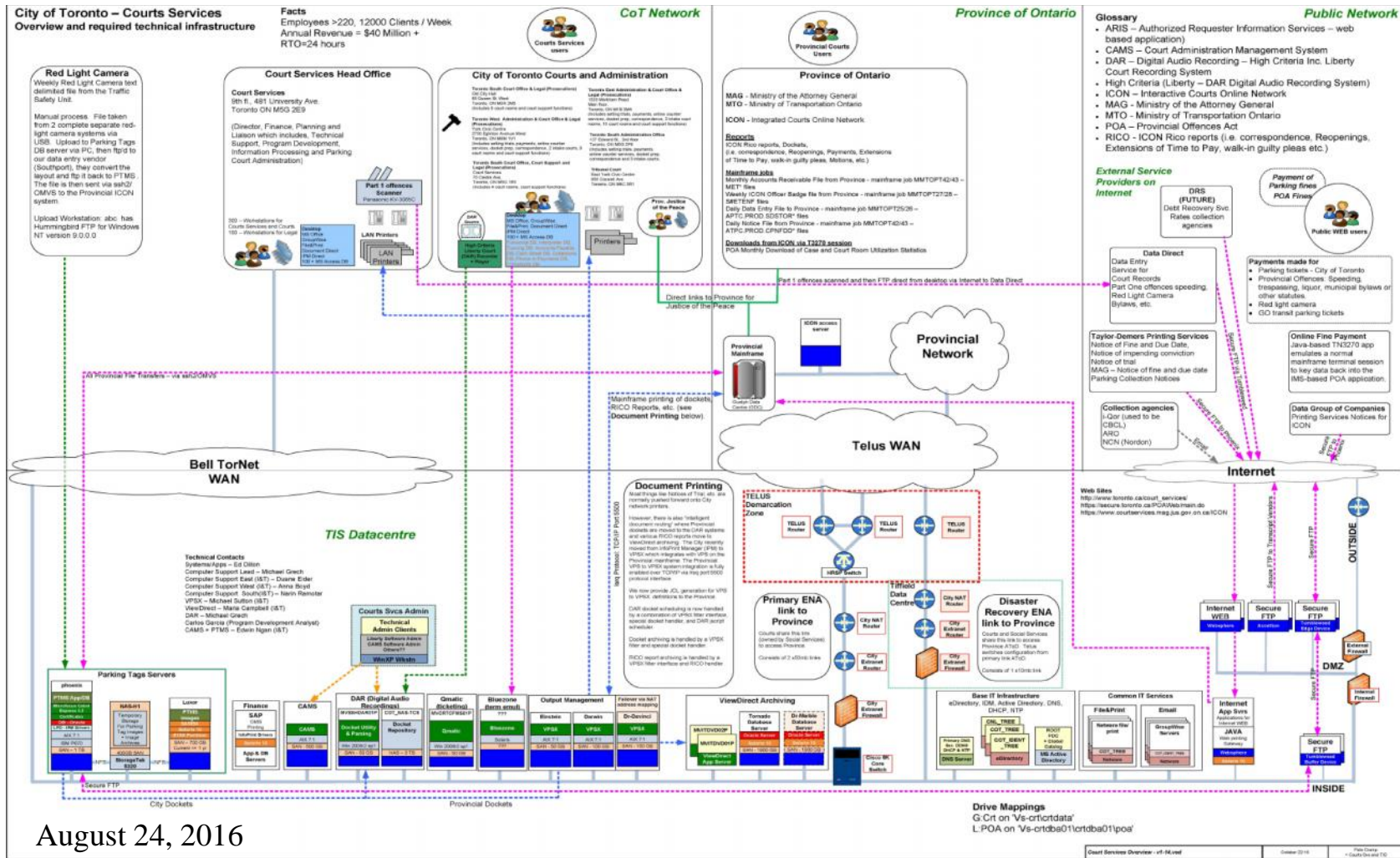
Post Mortem Stuff

- Be ready to amend your plan, don't be married to your Pulitzer-prize winning prose! [it ain't, trust us!]
- You **will not** anticipate **every** technical/operational glitch
- Take lots of notes during the process
- Talk to your clients afterwards on their experience, their results and satisfaction with the process

WHILE LOOPS

A WHILE LOOP CONTINUES TO REPEAT AN INSTRUCTION UNTIL A CONDITION IS MET

while Homer == hungry:
    print("Bring more food!!")

BRING MORE FOOD!!

- Be objective on what worked, what didn't
- Our systems are complex, things *will break* in a contingency, work on **solid** procedures to get **most** things working!
- Realize you may need to make *stepwise* refinements, we have had **five** tries at this! [You get better…]
- Use your open ***Change Order*** to make any necessary technical fixes as follow-up tasks

POSTMORTEM

[Oh ick!]

Finding Out More About Output Management Team

- Call 416 397 1995 or e-mail epteam@toronto.ca
- Send Information Request through Service Desk
- Our website
  - Upgrading to new Corporate Standard
  - More DRP material is coming
  - Continual work in progress, happy to work with anyone on new solutions to print and documents
  - Working on more document composition material i.e. PDF/A, PDF/UA
  - Converting Court Services, SAP, PTMS, PPFA solutions via our new PDF engines
  - http://insideto-dev.city.toronto.on.ca/eprint [our general site]

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Sticking to a Recovery Plan…

Thanks!

"We back up our data on sticky notes because sticky notes never crash."

SPIRITVICTORY

CORPORATION

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