

# Centrelink: Challenges of Scale

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# Agenda

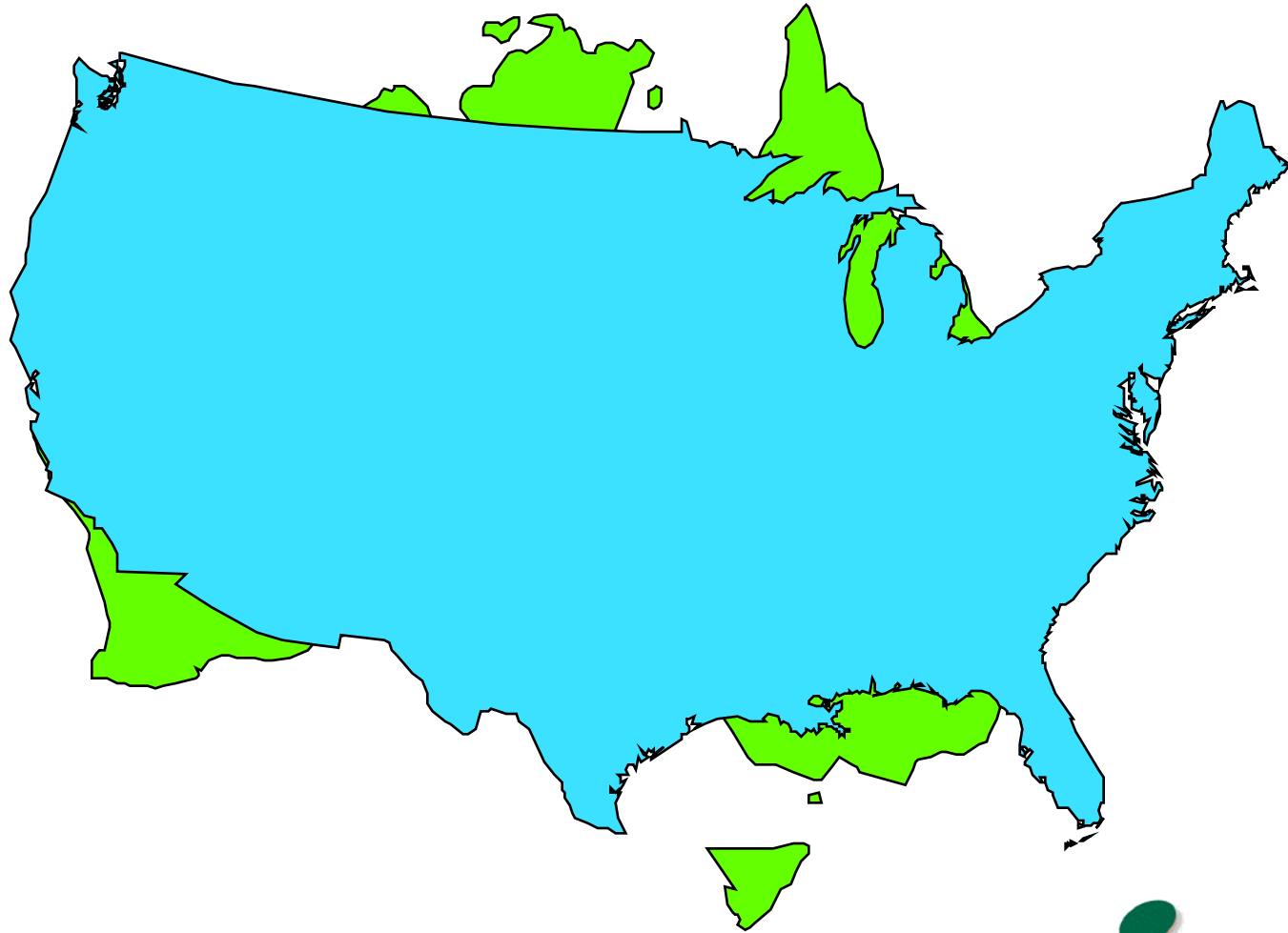
- Introduction
- Some Issues for Centrelink and M204
  - Rate of Growth
  - Integration Across Agencies
  - Access Card
  - Environment Management
  - Connectivity
  - 24\*7
  - Rate of Change
  - Monitoring and Problem Resolution
  - Telephony
- Performance Update

# What is Centrelink?

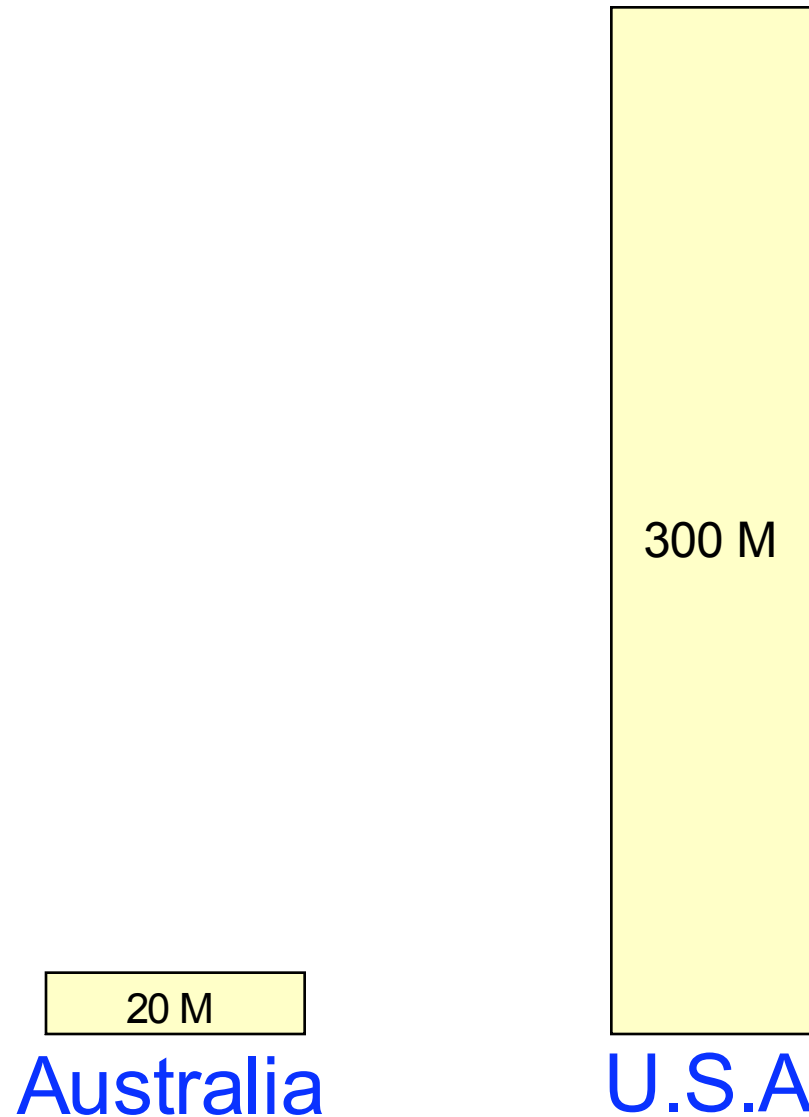
*Serving Australia by assisting people to become self-sufficient and supporting those in need.*



# United States versus Australia: Size



# United States versus Australia: Population





**Centrelink** performs the functions of:

- Individual State Unemployment agencies
- Individual State Welfare agencies
- US Social Security Administration
- And other payments that have no US equivalent: for instance the Baby Bonus

# Centrelink at a Glance

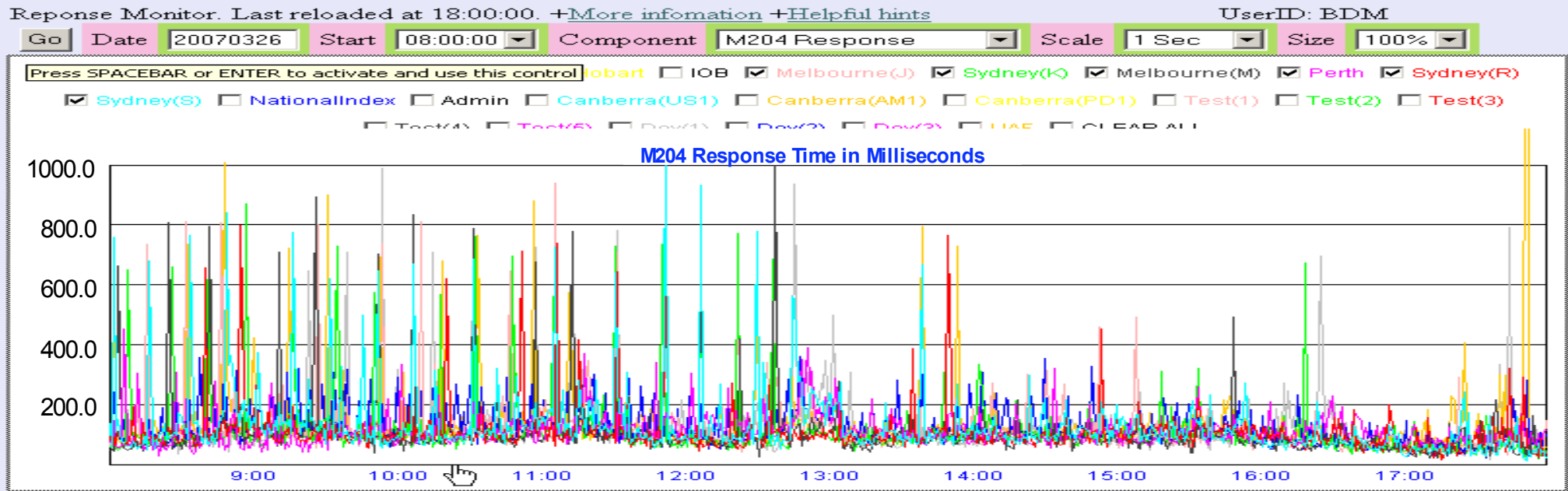
- 27,289 Staff
- 1000+ Service outlets around Australia
- 30.77 Million phone calls
- 6.49 Million customers
- 9.89 Individual entitlements
- 63.5 Billion Dollars (\$AUS) payments pa
- 86.4 Million letters per year
- 5.2 Billion mainframe transactions pa

# On-line Processing Environment

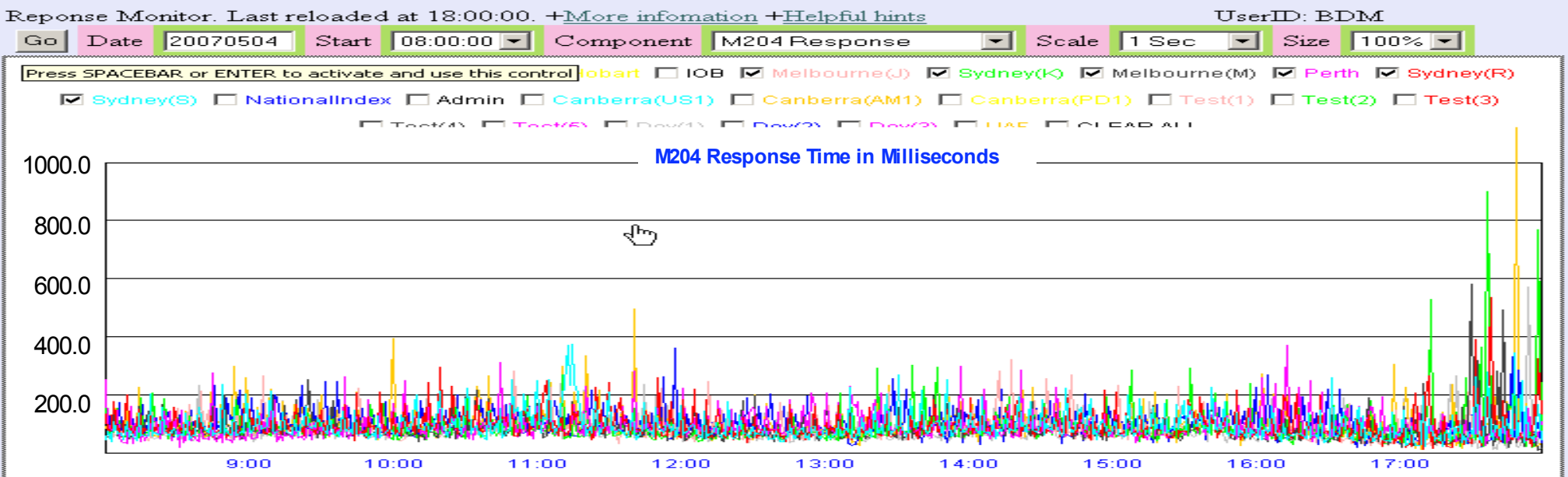
- 12 production environments
- 18,000 Concurrent users
- 700 screens per second
- 20 million screens per day
- 9 million lines of M204 code (UL)
- 500 files per online
- 0.2 - 0.3 second response (M/F)

# Sub Transaction Processing

Pre Sub Trans

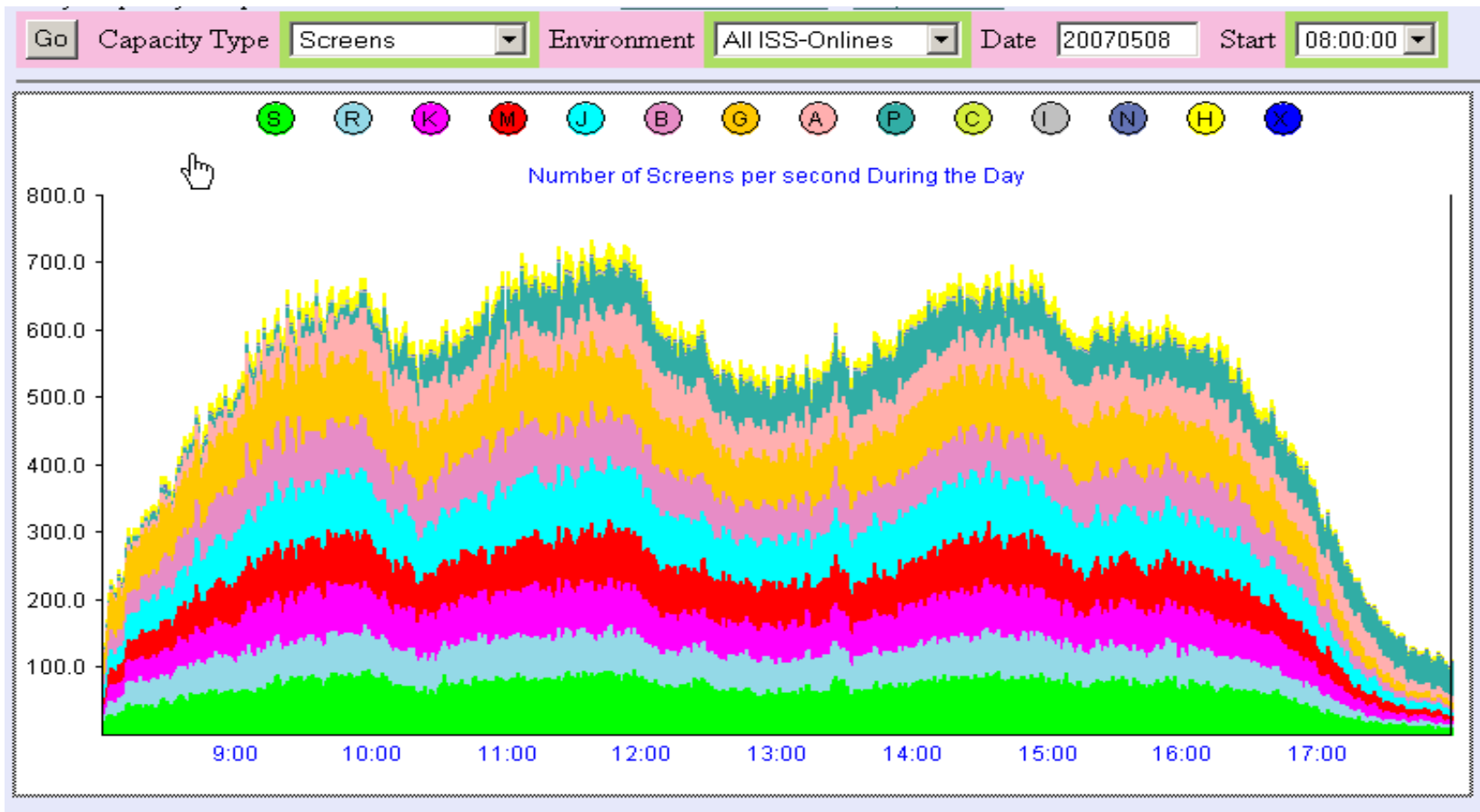


Post Sub Trans



# Transaction Patterns

- Main Peak between 11 and 12



# Model 204 Development and Testing

- 5 Development Environments catering for over 30 releases at any one time
- 6 Testing Environments simulating 30 production environments
- 3 System Assurance Environments two weeks prior to release
- 2 Performance & Stress Testing Environments
- TPNS testing new versions of M204, PerfOpts, hardware changes
  - About to include Janus work which accounts for 15-20% total workload

# Some of the IT Issues

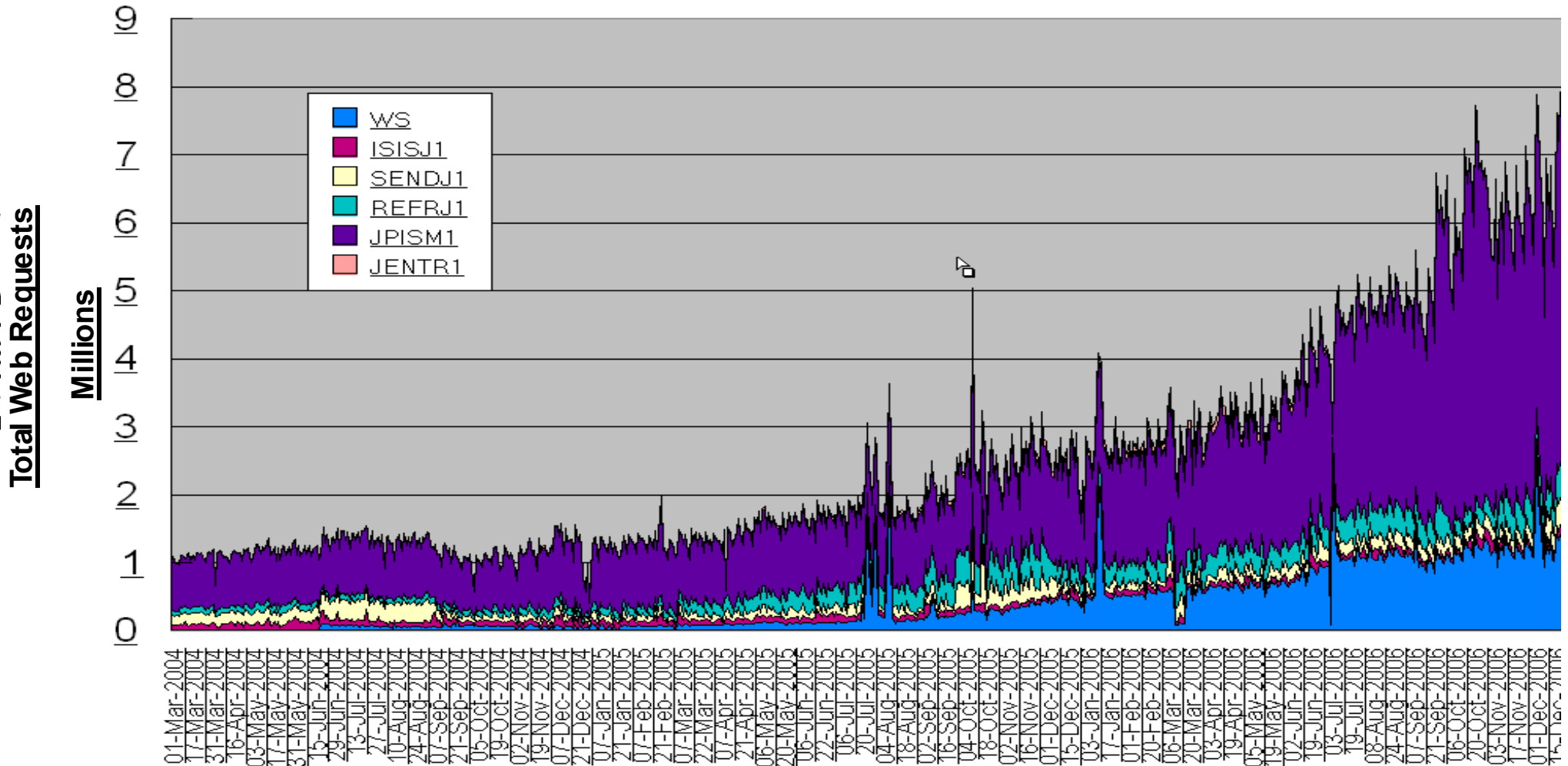
- Rate of Growth
- Integration Across Agencies
- Access Card
- Environment Management
- Connectivity
- 24\*7
- Rate of Change
- Monitoring and Problem Resolution
- Telephony

# MIPS Growth

- Base MIPS at April 03 = 8,000
  - Growth since 2003
    - ▶ 2003 = 90% (Several big initiatives, customer self service starting to kick in)
    - ▶ 2004 = 0% (War on MIPS)
    - ▶ 2005 = 20% (Normal (?) Growth)
    - ▶ 2006 = 20% (Normal Growth)
- Current MIPS Base at April 07 = 21,000
  - Future growth between 20-30% unless we do something about it

# Janus Web - An example of Growth

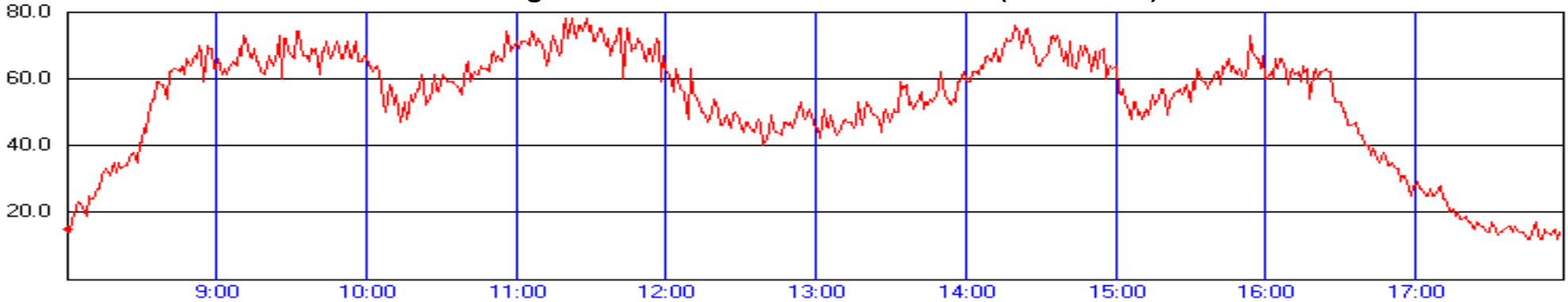
Janus Web Activities by Type up to Dec 2006



# 3270 Transaction rate growth

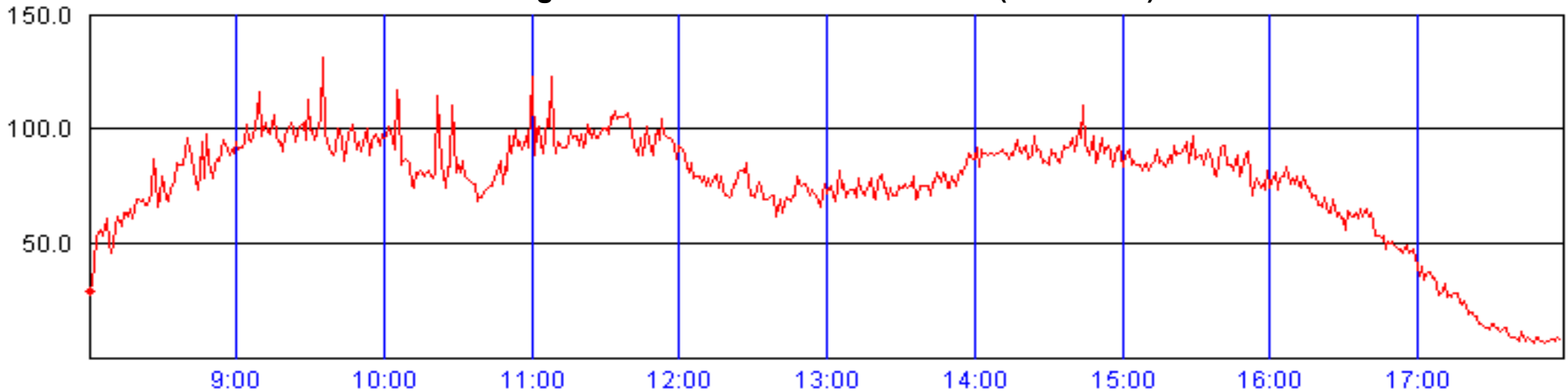
2003

Average Number of Screens Per Second (one online)



2007

Average Number of Screens Per Second (one online)



# A Suite of Solutions

- Application Tuning
  - War on MIPS
  - TAG processing
  - Change points
- M204 Performance Modifications
  - Version 6.2
  - More to come?
- Move work off peak
- Slow down change?
- Reviewing accuracy risk vs cost with business
- **Need to do all of these**

# Department of Human Services

- The department is responsible for ensuring the Government is able to get the best value for money in service delivery while emphasising continuous improvement and a whole-of-government approach.
- Access card

## Agencies



- Centrelink
- Medicare
- Child Support Agency
- Health Services Australia
- Hearing Australia
- Commonwealth Rehabilitation Services



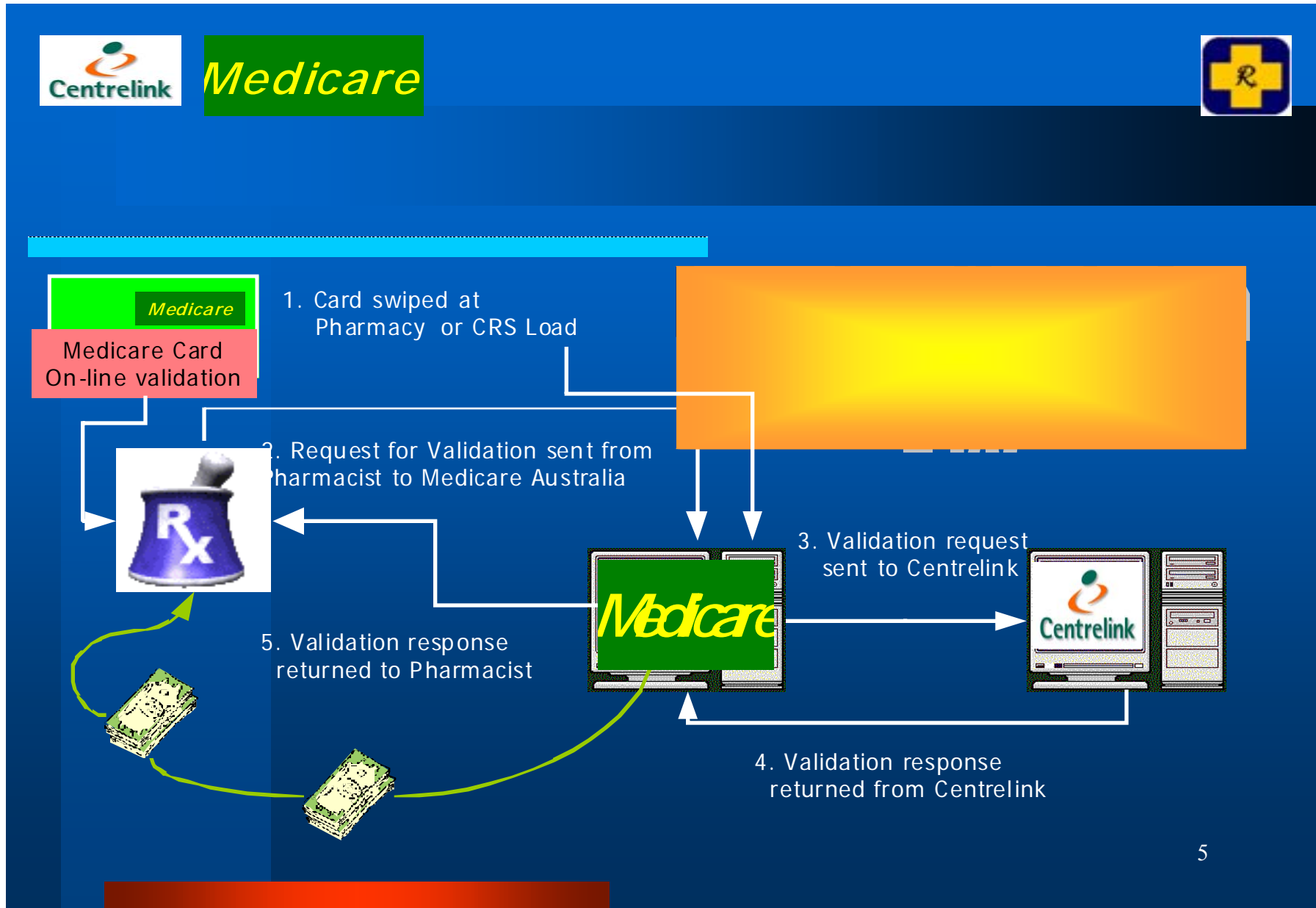
# Integration Across Agencies

Agency	Environment	Database
Centrelink	User Language J2EE (some)	Model 204 DB2 (some)
Medicare	Java	DB2
Child Support	.Net	DB2
CRS	SAP	Oracle

# Access Card

- Quick and simple verification of who customers are when dealing with us
- Updates to customer details, such as address, need only be made at one of our agencies
- Reducing the paper documents held by each agency
- Reducing health and social services fraud
- Will need to link with data from all agencies
- Smart card technology
- Will use photo biometrics
- Will not be an ID card

# Pharmaceutical Benefit System (PBS)



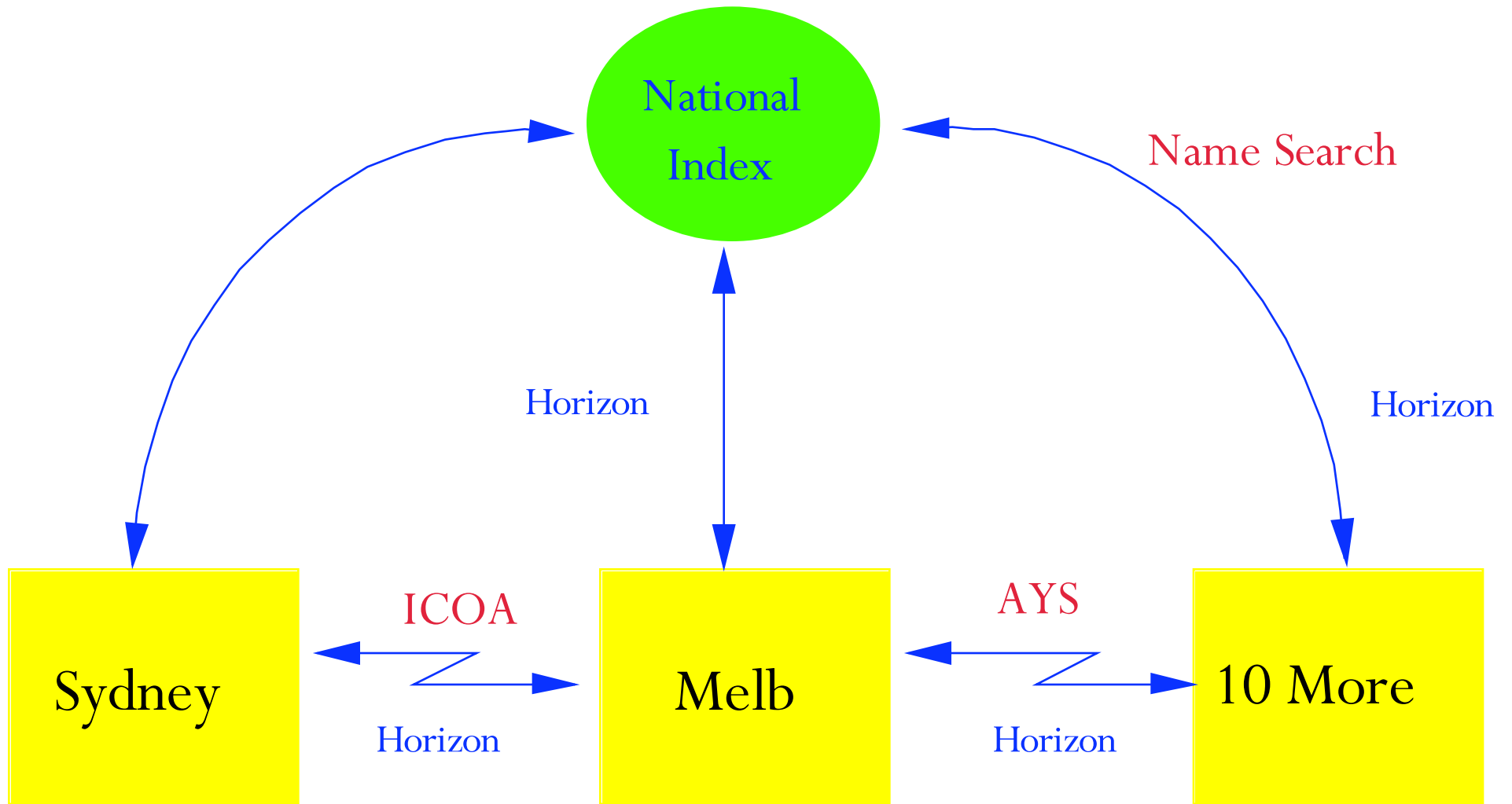
# A Janus Integration Example

- Concession Entitlement Verification
- Uses Janus SOAP
- Dedicated comms link
- Service Level Agreement requires less than 1 sec response. Target met easily.
- Potentially will be made redundant by Access Card
- 24\*7 using NX1,NX2 and smart application code

# Environment Management

- Eleven large environments
  - ▶ Spread across two datacentres
  - ▶ Single Logical Datacentre soon? PPRC?
- National index
  - ▶ Transparently(?) links the environments
- Challenges
  - ▶ Total transparency
  - ▶ Workload balancing
  - ▶ MI information providing a National overview
  - ▶ Manageable operations - small outages vs huge online
  - ▶ Remove single point of failure status of National Index

# A Federated Environment



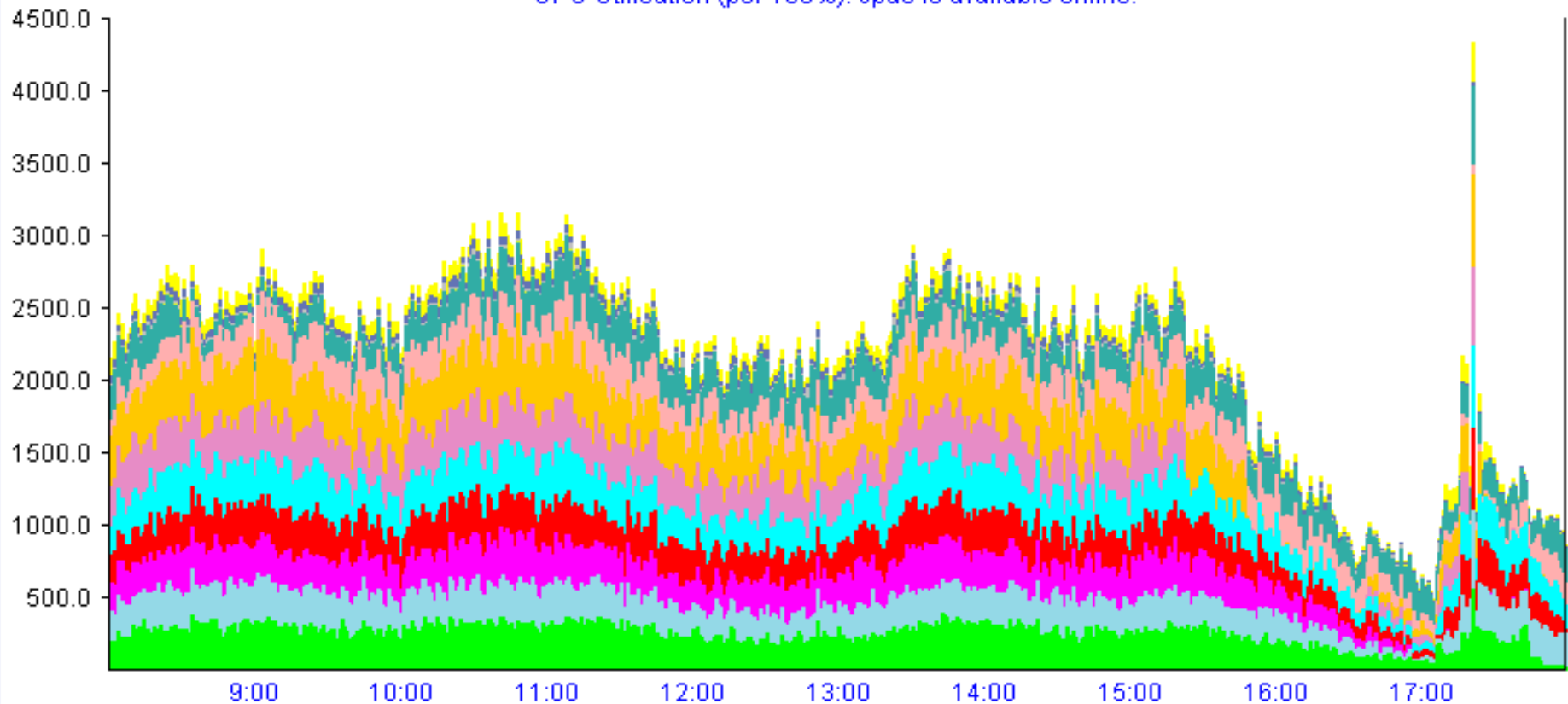
# A single virtual on-line

Daily Capacity Graph. Last reloaded at 18:00:00. [+More Information](#) [+Helpful Hints](#)

Go Capacity Type  Environment  Date  Start



CPU Utilisation (per 100%). cpus is available online.



# Connectivity

- Old complaint.... "but we can't use M204 and new technologies!"
- Some current Centrelink applications

Product	Presentation or Interface	Middleware	Connection	Data
Families Assistance	Browser	Forte	MQ	M204
Online Claims	Browser	J2EE	Janus Soap	M204
Personal Advisors Tools	Browser	M204	Janus Web	M204
Call Centre Automation	GUI	Forte	MQ	M204
Working Credit	Voice Recognition	Forte	MQ	M204
EDGE Expert System	Browser/NT	Forte	MQ	M204
G2G	Web Services	M204	Janus Soap	M204
Electronic Benefit Transfer	Compaq	M204	CCA Sockets	M204
Customer Account	Browser	Forte	MQ	M204
Profiling	Browser	M204	Janus Web	M204
Sprite	GUI	M204	3270 Screen Scraping	M204

# 24\*7

## ■ Current availability

- 5.30am to 12.00pm (actually 2.00am to 12.00pm)
- 5.00am to 6.00pm Saturday
- 8.00am 10.00pm Sunday

## ■ What does the business really want/need?

- 23\*7, 24\*6, etc
- 24\*7 realtime update?

## ■ Inhibitors

- M204 batch still occurring
- Re-orgs
- Code releases
- Hardware maintenance
  - ▶ Move onlines between machines

# 24\*7

- Service Level Agreements (via ITIL) are helping to drive the process
- Help from CCA and Sirius to reduce downtime due to re-orgs and software installs
- Dramatic reduction in BATCH204 jobs

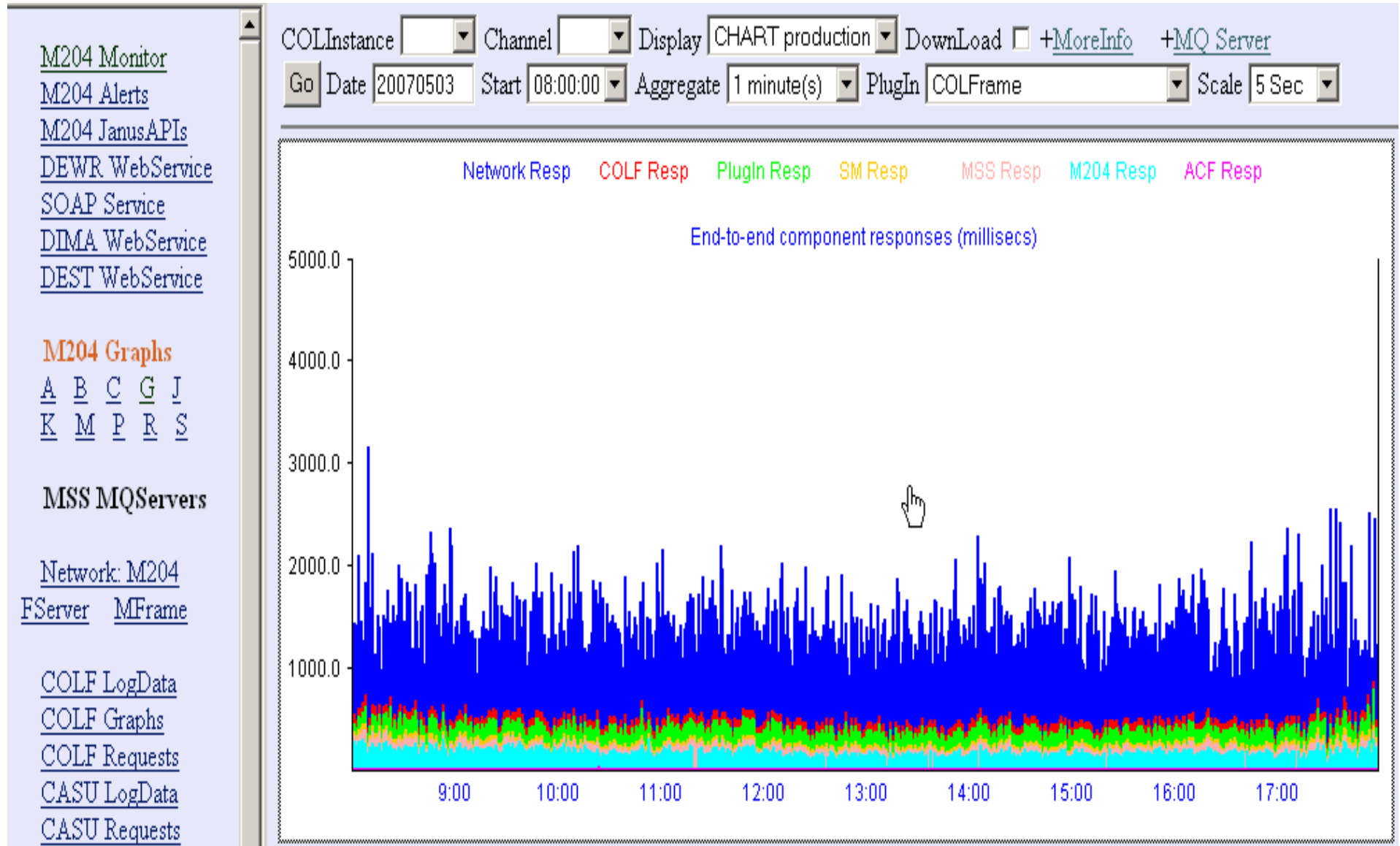
# Rate of Change

- Last 6 months major releases:
  - ▶ December, January, March, Late March, April, June
  - ▶ Over 1000 function points each release
- Legislative change equals
  - ▶ Fixed deadlines
  - ▶ Tight timeframes
  - ▶ Late specifications
- Over 20 different versions "on the boil" at any one time
- Handled via in-house M204 based version control
- Mid range (J2EE, Forte, etc) version control a significant problem
  - Can't keep up with M204 code changes

# Monitoring and Problem resolution

- End to end monitoring
  - Difficulty in quickly identifying cause of problems
  - Difficulty in determining the end-to-end user experience (without ringing them up)
- We are progressing toward end-to-end monitoring using M204 based tools!
  - Messages from non M204 systems sent via MQ
  - Displayed via a browser using Janus Web

# Example Screen Shot from DM1



# Web vs Telephony

- Accepted wisdom is that the Web is the way.....
- But Centrelink's prime Customer service interface is Call Centres and the telephone
- >4,000 Customer Service Advisors (CSAs)
- 27 Call Centres
- Up to 120,000 calls per day
- Staff scheduled in 15 minute blocks
- Skills based routing

# Current Applications

- All Call Centre CSAs are currently using SoftPhone / ScreenPop
- > 50% (50,000) callers per day are entering their CRN to self identify
- 12,000 fully Self authenticated Calls Per Day
- 1,000,000+ Customers with PIN
- Centrelink has 1,410 speech enabled IVR ports
- All Centrelink customers access a CSA via speech enabled menus, including an auto attendant for Multilingual Call Centre
- Centrelink has six speech enabled self service applications



# Future

- Report Employment Income (recording casual earnings - Approx' 115,000 per fortnight)
- Payment Information next and last payments - Approx' 50,000 per fortnight)
- Advance Payments
- Update annual income estimates for family payments
- Request documents
- Change PIN