splunk>

Using Splunk with SAP: Planning for Performance and Capacity

.conf 2010

Splunk Worldwide Users' Conference

The Palace Hotel, San Francisco, CA
August 9-11, 2010

Shaun Butler and Luke Harris

About Corporate Express

- Supplier of business essentials, established in 1995
- Revenue $1.16 billion in 2009
- E-Commerce sales currently account for 80% of all orders
- Over 2300 staff in over 40 locations across Australia and New Zealand

Our mission:

"To provide a single source supply solution to make it easier and more cost effective for our customers to do business."

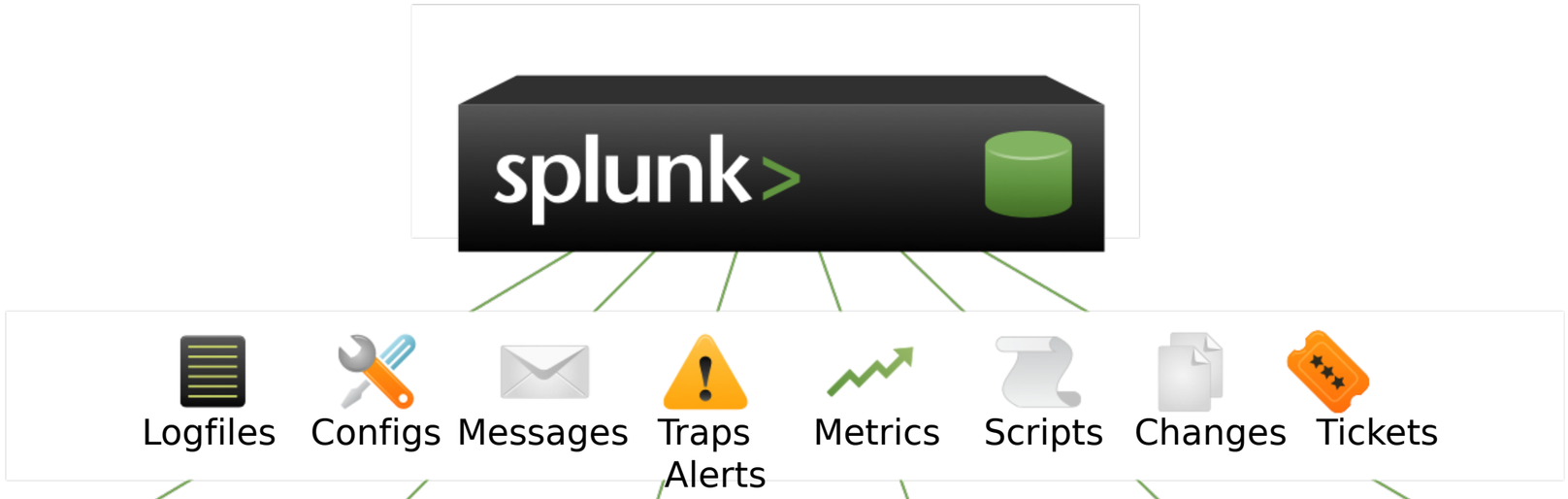
About Shaun Butler

- Senior Technology Specialist (Infrastructure Services)
- RHCE, EMCPA
- Senior authority for planning, design, implementation and support in relation to Tier One Infrastructure (including AIX, System P, Linux, Oracle and Enterprise Storage)
- Infrastructure Services is responsible for core infrastructure components – datacentre, network, servers, storage, virtualisation, monitoring, DNS/DHCP, email

About Luke Harris

- Senior Systems Engineer (Infrastructure Services)
- Linux SOE Specialist, RHCE
- EMC Storage Administrator
- Splunk, Nagios, Cacti, and DNS Administrator
- SplunkForNagios developer:
  - ✓ http://www.splunkbase.com/apps/All/4.x/Add-On/app:SplunkForNagios

Splunk At CE: Data Sources



Windows
- Syslog (Snare)
- Event logs
- Active Directory

Linux/Unix
- Syslog
- DNS, DHCP
- Nagios
- Postfix

Virtualization
- Hypervisor (ESX)
- VirtualCenter

Applications
- Web logs
- SAP
- webMethods
- netXpress

Cisco
- Firewalls, IPS, ACE
- Routers, Switches
- Proxy, WAAS

Storage
- EMC Symmetrix

Splunk At Corporate Express: Deployment

Infrastructure

- ✓ 1 Production server (IBM Blade)
- ✓ 1 non-production server (VM)
- ✓ Operating System: RHEL 5.5 64-bit

Data Inputs

- ✓ Syslog – Linux, AIX, Windows (via Snare), ESX, Cisco Switches, Routers, Firewalls, Load Balancers, WAAS, VPN
- ✓ SNMP – Cisco IPS
- ✓ rsync – SAP, webMethods, Nagios, Proxy, Apache, EMC
- ✓ CIFS – Altiris
- ✓ wget – netflow (StatSeeker)

SAP at Corporate Express

- nXtgen Project – Business transformation and ERP replacement
- SAP applications implemented (5 out of 6)
  - ✓ ERP Central Component (ECC)
  - ✓ Customer Relationship Management (CRM)
  - ✓ Business Intelligence (BI)
  - ✓ Master Data Management (MDM)
  - ✓ Process Integration (PI)
  - ✓ Portal
- New Zealand go live April 2010
- Australia go live 2011

Splunk's Value Proposition in a SAP World

Powerful Trending + Data Accessibility + Data Augmentation

=

Operational Intelligence

SAP Data Sources

- ECC, CRM, BI – Data retrieved from:
  - ✓ ST03 - SAP Workload Monitor
  - ✓ SM04 – SAP User List
  - ✓ SM04/ST03 transactions are periodically called and output dumped into text files
- MDM – Application logs
- File replication/rsync

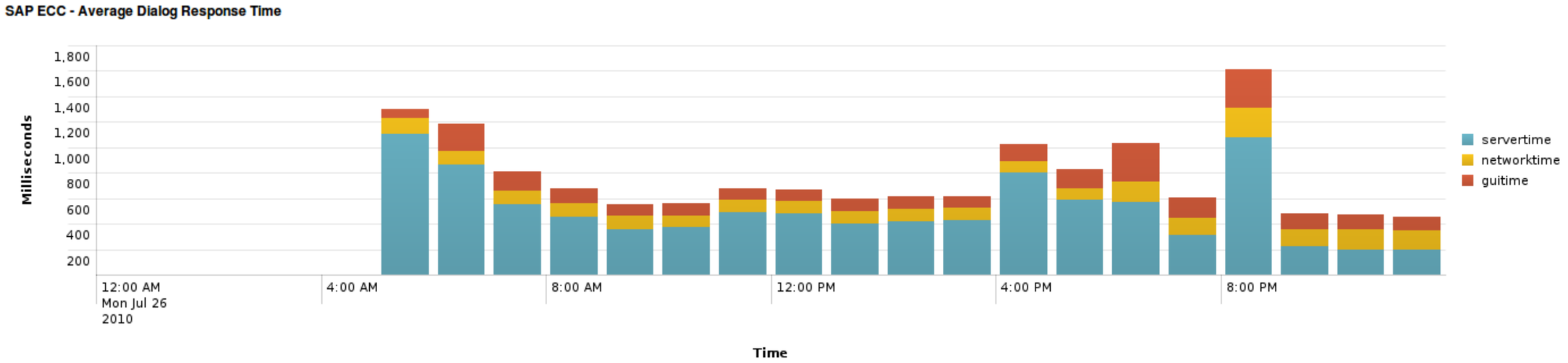
SAP Use Cases At CE

- Application Performance
- Capacity/usage
- Network analysis

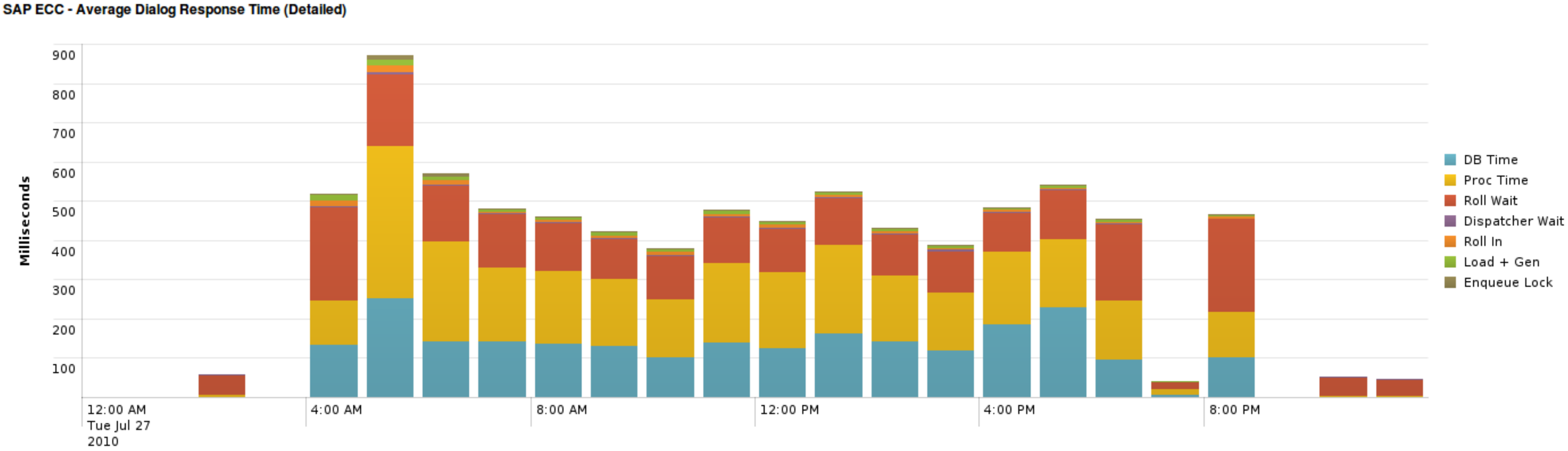
SAP Use Case 1: Application Performance

- ABAP SAP Application Stack (e.g. ERP, CRM, BI)
- SAP Master Data Management (MDM)

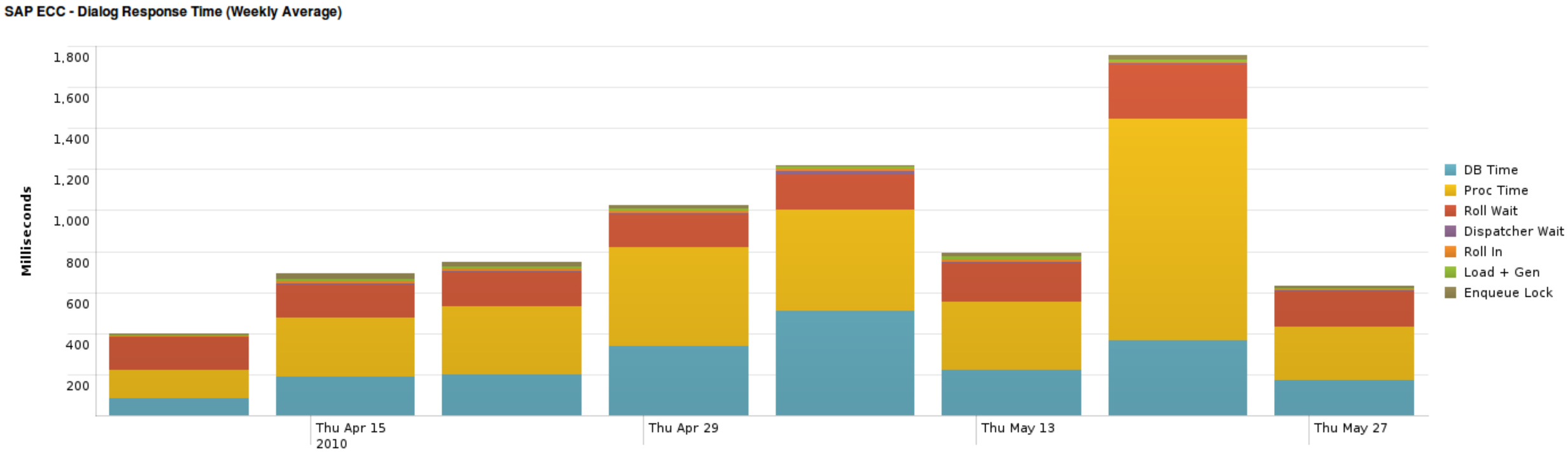
Application Performance: Summary Dialog Step Response Time



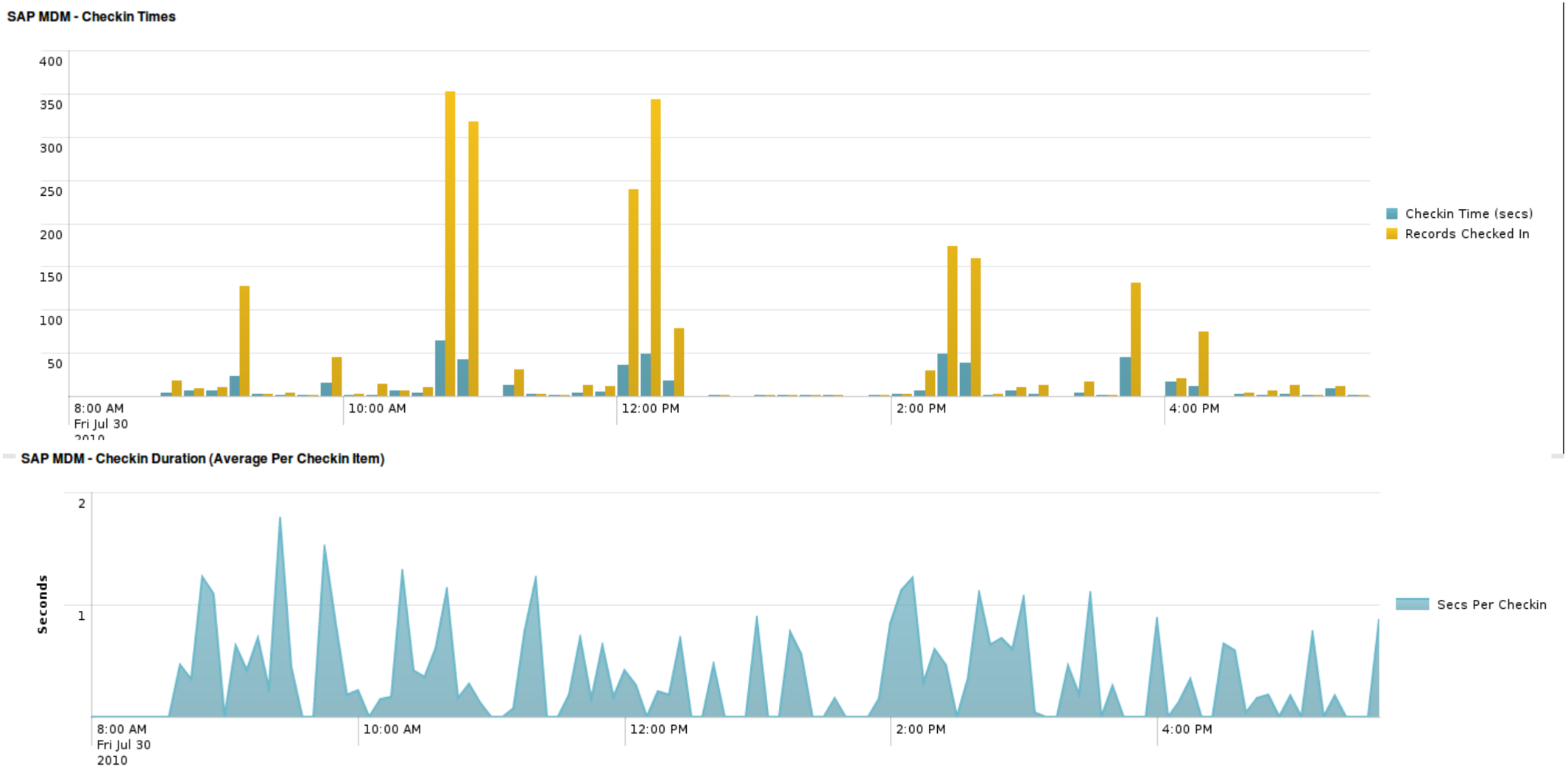
Application Performance: Detailed Dialog Step Response Time



Application Performance: Detailed Dialog Step Response Time (Long Term Trending)



Application Performance: Checking



Application Performance: MDM Import Time

From This:

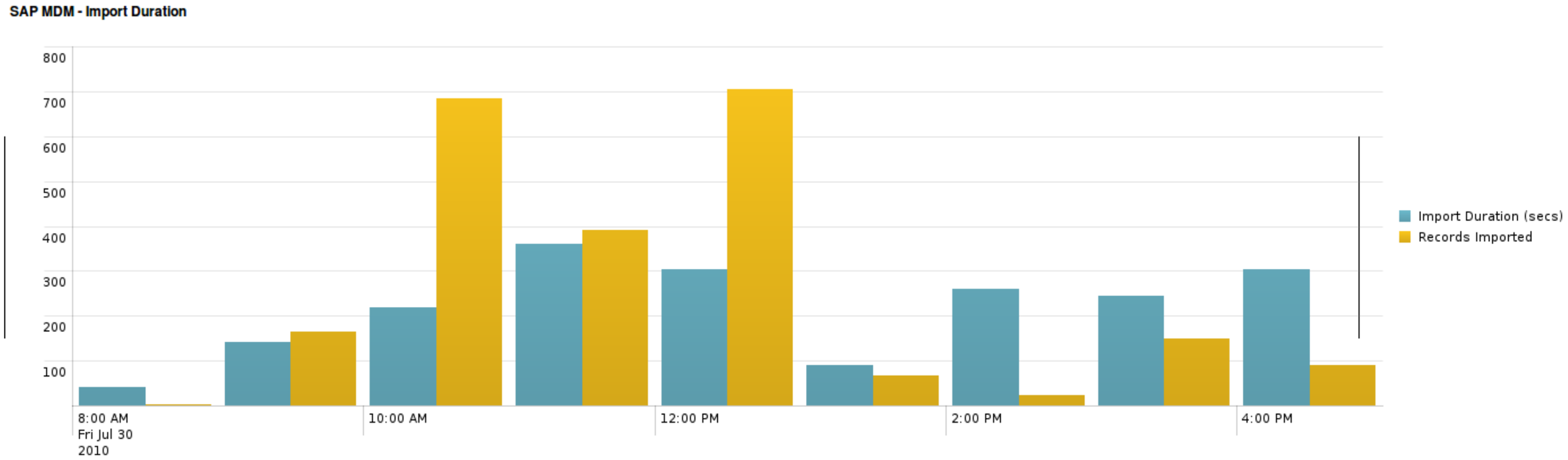
```
<Trace ts="2010/07/30 07:02:43.821 GMT" tid="1029" entry-no="18583">[MDS=syd1sap08 Repository=MDP ClientSystem=Code_Template
Port=Masterpack_Portal]:   Chunk size/parallel[50000/40]: Import Task Started.</Trace>
        <Timer ts="2010/07/30 07:02:47.426 GMT" tid="1029" entry-no="18584" name="GetInitializationInfoAllLanguages"
total="3.604439"/>
        <Timer ts="2010/07/30 07:02:47.707 GMT" tid="1029" entry-no="18585" name="Add User Dimensions" total="0.000006"/>
        <Timer ts="2010/07/30 07:02:48.199 GMT" tid="1029" entry-no="18586" name="Regular Table Load" total="0.492183"/>
        <Timer ts="2010/07/30 07:02:48.200 GMT" tid="1029" entry-no="18587" name="data Table Load " total="0.000095"/>
```

---*snip 30 lines*---

```
<Trace ts="2010/07/30 07:03:05.515 GMT" tid="1543" entry-no="18620">Import action:<LF/>--Skip: 0<LF/>--Create: 0<LF/>--Updated
(NULL fields only): 0<LF/>--Updated (all mapped fields): 36<LF/>--Replace: 0<LF/>--Delete [destination]: 0<LF/>--Value Exceptions:
0<LF/>--Import Exceptions: 0</Trace>
        <Trace ts="2010/07/30 07:03:05.516 GMT" tid="1543" entry-no="18621">xImporter: Total chunk import time: 77000.000000000
milli-seconds.</Trace>
        <Trace ts="2010/07/30 07:03:07.511 GMT" tid="1543" entry-no="18622">xImporter: : Start -&gt; End: 1083000.000000000 milli-
seconds.</Trace>
<?xml version="1.0" encoding="utf-8"?>
<?xml-stylesheet type="text/xsl" href="MDM_Log.xsl"?>
        <Trace ts="2010/07/30 07:03:08.913 GMT" tid="1029" entry-no="18623">[MDS=syd1sap08 Repository=MDP
ClientSystem=Code_Template Port=Masterpack_Portal]:   Chunk size/parallel[50000/40]: Import Task Finished.</Trace>
    </Open>
</MDM_Log>
```

Application Performance: MDM Import Time

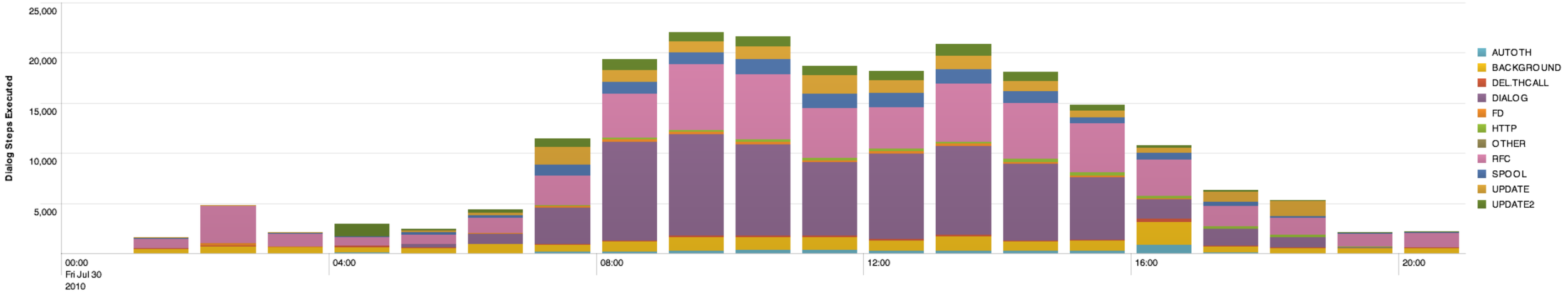
To This:



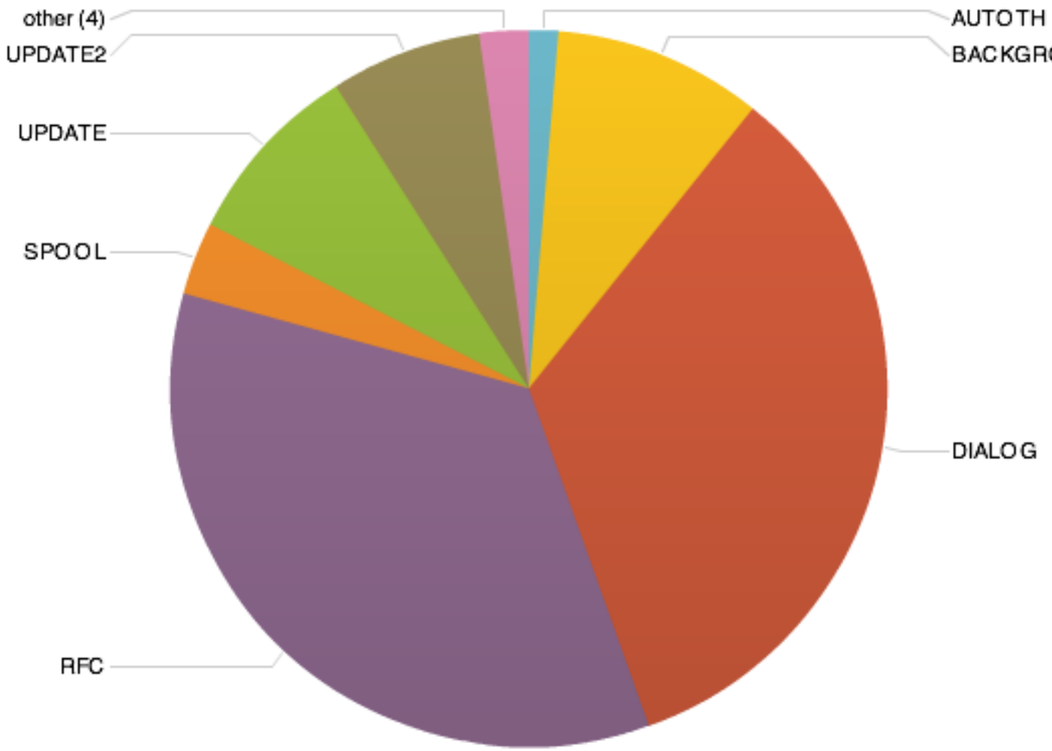
SAP Use Case 2: Throughput/Capacity

- ABAP SAP Applications (e.g. ECC, CRM, BI)
  - ✓ Dialog steps executed over time
  - ✓ System activity expressed in SAPS
  - ✓ Concurrent Users
- SAP Master Data Management (MDM)
  - ✓ Transaction throughput – Import/syndication

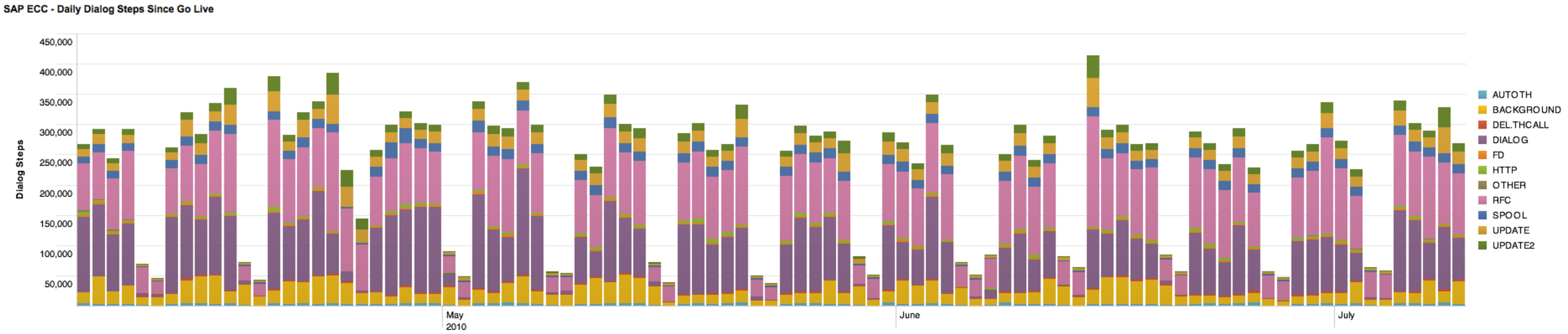
Dialog Steps Executed Over Time (Business Day)



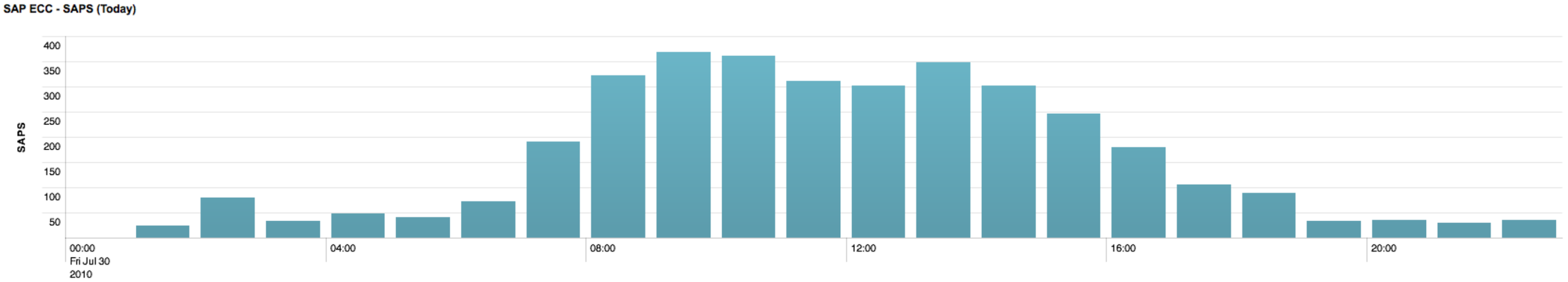
Dialog Steps by Task Type



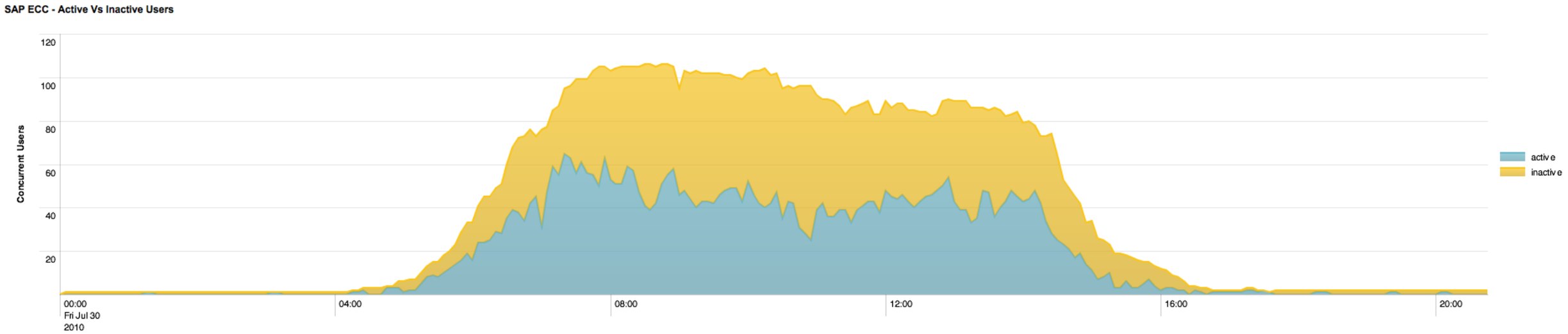
Dialog Steps Since Go Live



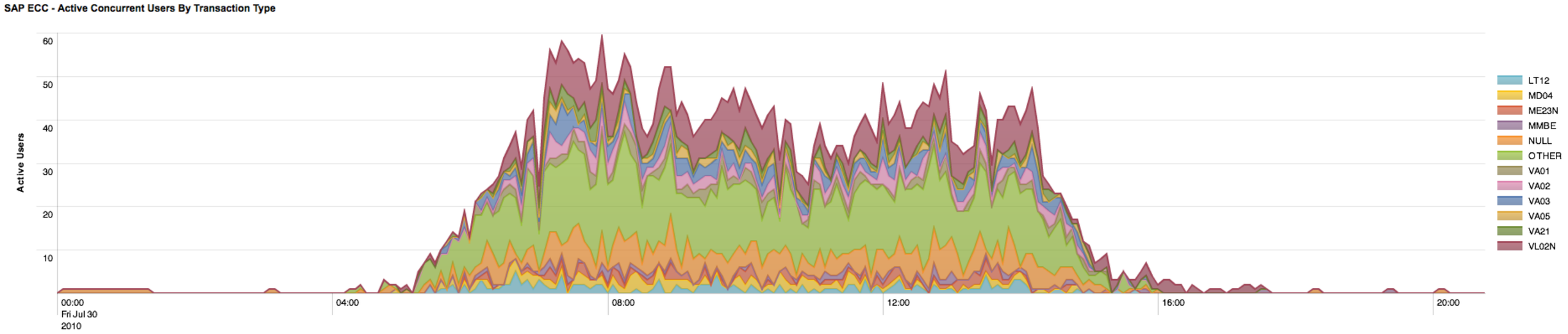
SAP Throughput as Represented by SAPS



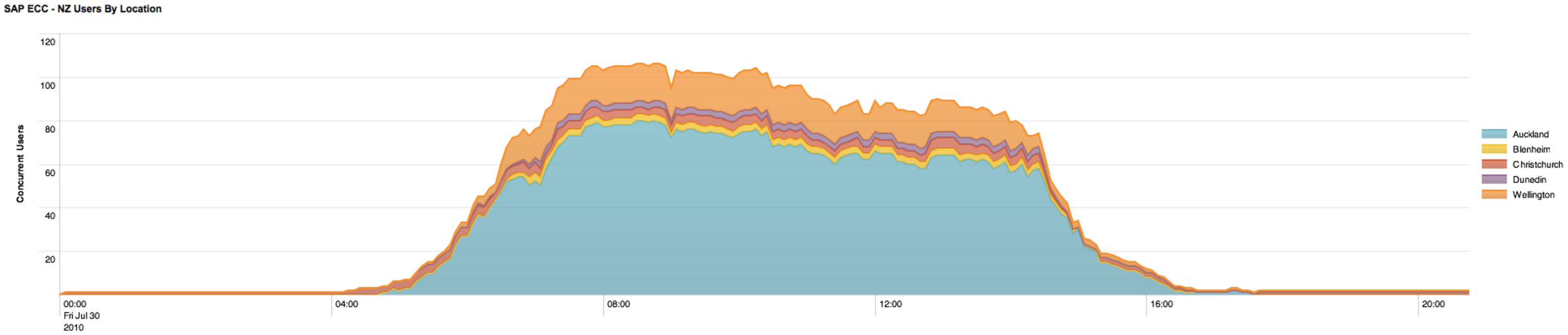
Active vs. Inactive Concurrent Users



Active Users by Transaction Type



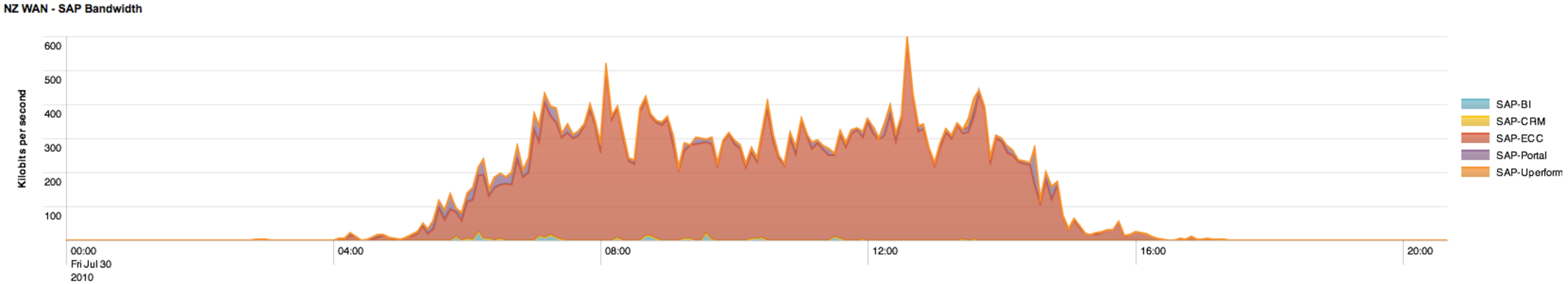
Active Users By Location



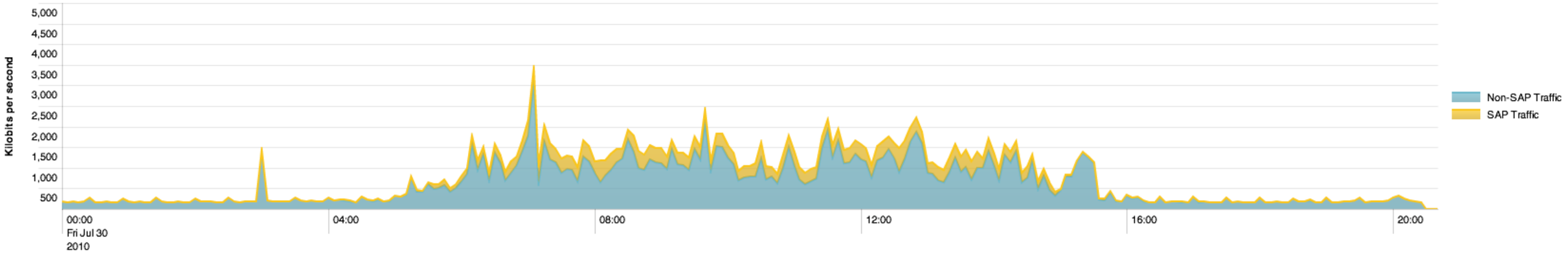
SAP Use Case 3: Network Analysis

- WAN bandwidth consumption split by SAP application
- SAP vs. Non-SAP WAN bandwidth consumption
- Average WAN bandwidth footprint per SAP user

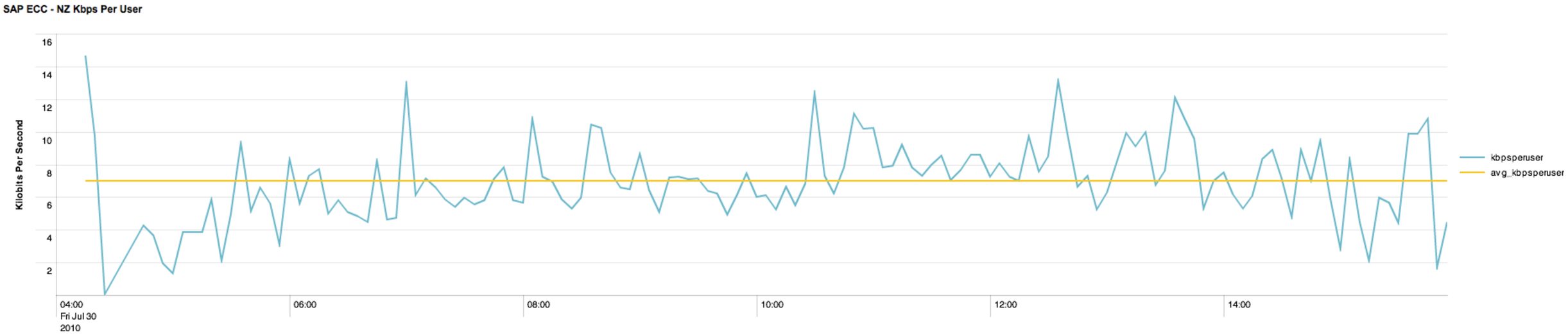
WAN Bandwidth Consumption by SAP Application



WAN Bandwidth Consumption – SAP vs. Non-SAP



Average WAN Footprint Per User



Bringing It All Together...

splunk> Search

Logged in as ashaun.butler | App | Manager | Jobs | Logout

Summary | Search | Status | Views | Searches & Reports | Help | About

SAP | Actions

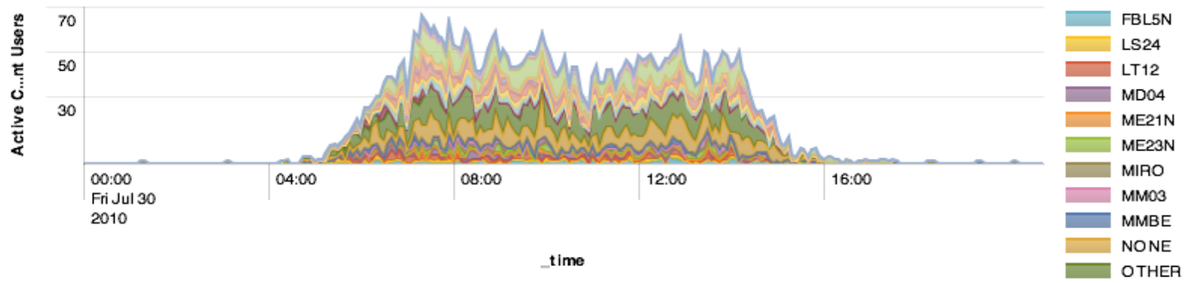
SAP ECC - Dialog Steps Executed refreshed: **today at 23:06:22.**

47471

SAP ECC - SAPS Calculation refreshed: **today at 23:06:22.**

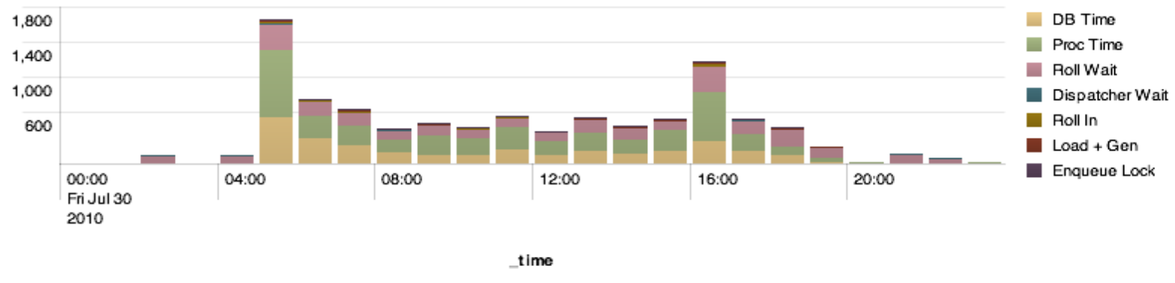
791.183333

SAP ECC - Active Concurrent Users By Transaction Type refreshed: **today at 23:06:23.**



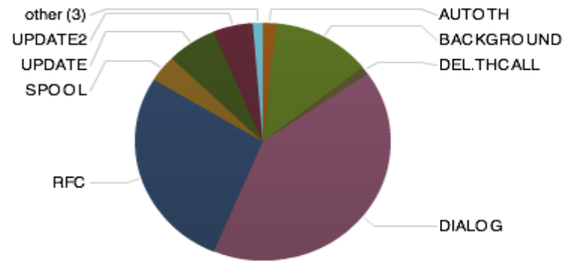
View results

SAP ECC - Average Dialog Response Time refreshed: **today at 23:06:23.**



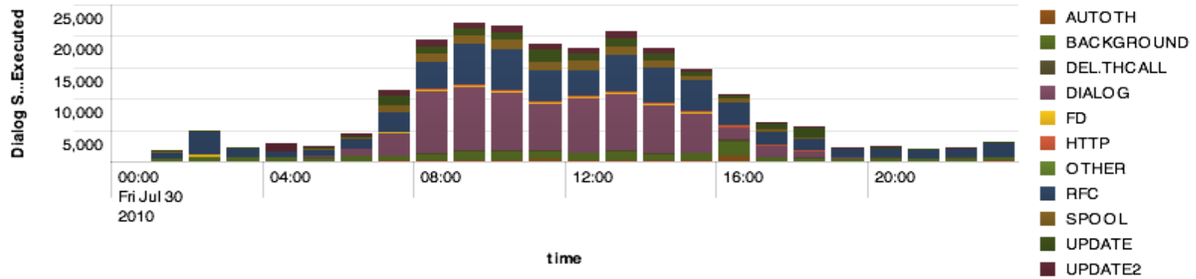
View results

SAP ECC - Dialog Steps Executed By Task Type refreshed: **today at 23:06:24.**



View results

SAP ECC - Dialog Steps Executed Over Time refreshed: **today at 23:06:24.**



View results

Bringing It Even More Together (SplunkForNagios)

splunk> SplunkForNagios

Logged in as aluke.harris | App | Manager | Jobs | Logout

Search | Views | Searches & Reports | Help | About

Nagios - SAP Alerts | Actions

Warning Alerts - Last 60 Minutes refreshed: **today at 11:07:45 AM.**

0

Critical Alerts - Last 60 Minutes refreshed: **today at 11:07:45 AM.**

1

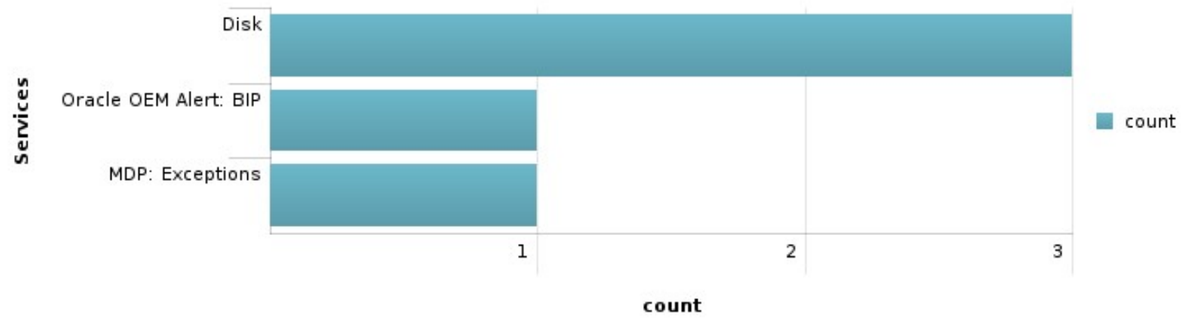
Warning and Critical Alerts refreshed: **today at 11:07:45 AM.**

Last 24 hours

	_time	hostalert	servicealertname	status	statusinfo	hoststatus	hostinfo
1	7/21/10 10:30:45.000 AM	syd1sap04	ECP: Memory Usage	CRITICAL	Processes using more than 1024MB memory: 12058736		

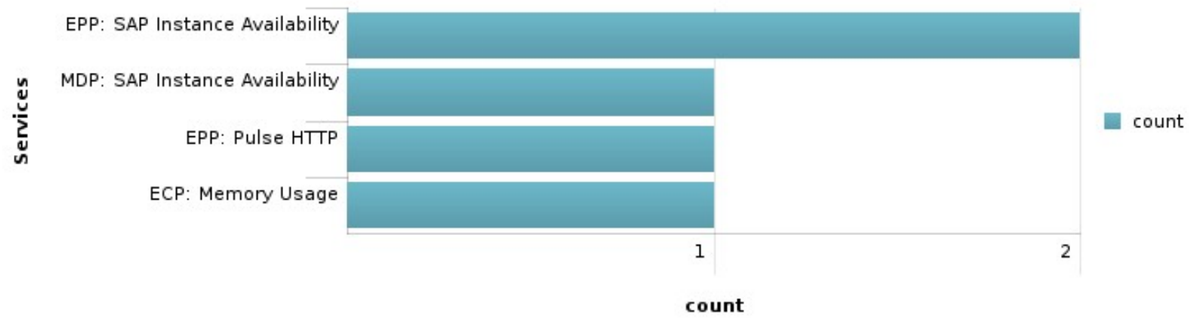
Top 10 Service Notifications with status Warning refreshed: **today at 11:07:45 AM.**

Last 7 days



Top 10 Service Notifications with status Critical refreshed: **today at 11:07:45 AM.**

Last 7 days



Anticipated Challenges

- Have a clear idea of what you are trying to achieve
- Get your Basis/SAP administrator on board!

The Future

- SAP Enterprise Portal
- Auditing
- Investigate implementing ST03/SM04 data output into database and index from there

Questions?