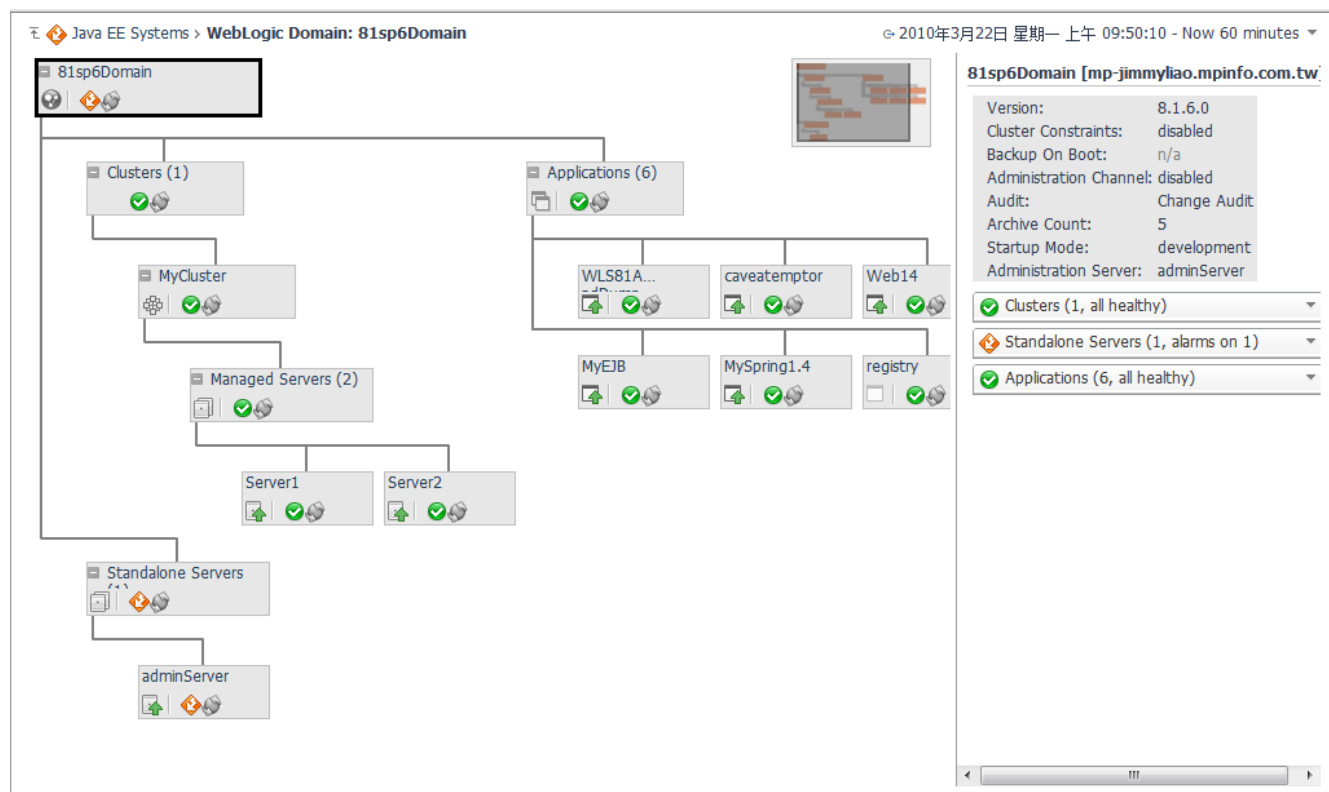


Quest Foglight – 全方位的 J2EE AP Server 監看工具

如何快速掌握目前 AP Server 的狀況?

一個複雜且龐大的 J2EE AP Server，身為管理者如何掌握系統的服務是否正常運作呢?是否每天為了此問題而痛苦呢?

以下為 WebLogic Server 為例，下方為 Foglight 所呈現 WebLogic Domain 的拓樸圖，可讓您一眼得知目前 Domain 有多少個 Managed Server，多少個 Web Apps，目前各個系統服務狀況如何:



上圖中綠色的部份表示健康狀況 OK，橘色表示有 Warning，只要按一下上面的 link 就可以 Drill Down 到有問題的 Service。

AP Server 的細部 Service 狀況

透過 Foglight 的監看可以讓管理者更細部得知 AP Server 內所有的 Service 是否正常運作，例如：Execute Queue，JDBC DataSources，JMS Server，JTA，Security 等。

Java EE Systems

Showing 1 of 1 Systems Filter by: Search Clear Advanced

81sp6Domain [mp-jimm... - WebLogic 3 5 1

Infrastructure Applications Related

Name	Alarms	Requests	Methods	Apps	JVM	Services
adminServer	1	✓		✓	✓	✗
MyCluster	0					
Server1	0			✓		✓
Server2	0			✓		✓

Services Health on adminServer

- ✓ Execute Queues (3)
- ☑ Work Managers
- ☑ Self-Tuning Thread Pool
- ✗ **JDBC Data Sources (4, alarms on 1)**
- ✓ JMS Servers (2)
- ✓ JTA
- ✓ Security (1)
- ☑ Store and Forward

當有問題的 Service 會以紅色(Fail or Critical)或是橘色(Warning)表示，很容易辨視。下圖為 Drill Down 到有問題的 JDBC DataSource，從圖中得知有兩個高峰使用率滿載而使得 Foglight 發出橘色燈號(Warning)來提醒管理者。

只要狀況有解除則 Service 會自動回到綠色燈號。

System - WebLogic: 81sp6Domain [mp-jimm...
Admin Server: adminServer
Server: adminServer Health: ✓ Alarms: Changes: 0 local

JDBC Data Sources for adminServer

JDBC Data Sources (4)

State	Health	Name	Connection Pool				Prepared Statement Cache						
			Usage (%) CURRENT	Usage (%) MAX	Max Size CONFIG	Waiters CURRENT	Connection Failures After Waiting TOTAL	Leaked Connections TOTAL	Cache Size AVG	Access Count TOTAL	Miss (%) CURRENT	Added TOTAL	Deleted TOTAL
✓	✓	caveatemptor	0.00	0.00	15	0	n/a	0	n/a	0	0.00	n/a	n/a
✓	✓	hongling	0.00	0.00	15	0	n/a	0	n/a	0	0.00	n/a	n/a
✗	✗	mysql	108.00	30	30	0	n/a	125	n/a	3,211	0.00	n/a	n/a
✓	✓	oracle11g	0.00	0.00	15	0	n/a	0	n/a	0	0.00	n/a	n/a

mysql

Connection Pool: Usage and Waiters

Connection Request Count

There is No Data To Display

Connection Failures After Waiting

There is No Data To Display

Statement Cache: Miss % and Access Count

Foglight 可以更細部的檢視每一個 Service，例如下圖為監看 Execute Queue 的狀況圖：

Java EE Systems > Execute Queues

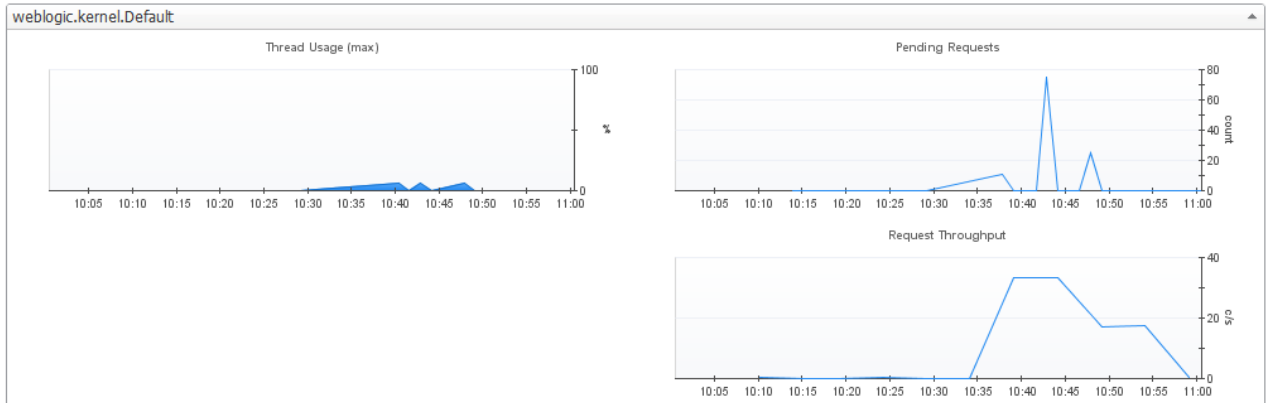
2010年3月22日 星期一 上午 10:00:28 - 上午 11:00:28 60 minutes

System - WebLogic: 81sp6Domain [mp-jimm...]
Admin Server: adminServer
Server: adminServer

Execute Queues for adminServer

Health: ✔ Alarms: □□□ Changes: 3 local

Execute Queues (3)		Queue			Requests						
Health	Name	Max Threads	CONFIG	Thread Usage (%)	CURRENT	Pending Count	CURRENT	Processed	TOTAL	Throughput (c/s)	CURRENT
✔	MyExecuteQueue-1		400	0.00	0	0	0	0	0	0	0
✔	SampleQueue		400	0.00	0	0	0	0	0	0	0
✔	weblogic.kernel.Default		400	0.00	0	0	30,149	0	0	0	0



Foglight 也提供 JVM 狀況監看，例如：JVM 版本，GC 狀況，Heap 使用率，Threads，Thread DeadLock 等。

Foglight®

The screenshot shows the Foglight console interface for monitoring Java EE Systems. The main dashboard displays a table of system components:

Name	Alarms	Requests	Methods	Apps	JVM	Services
adminServer	1	✔			✔	✔
MyCluster	0	✔			✔	
Server1	0	✔			✔	
Server2	0	✔			✔	

A detailed pop-up window titled 'JVM Health on adminServer' provides further information:

- Name:** Java HotSpot(TM) Client VM
- Version:** 1.4.2_19
- Vendor:** Sun Microsystems Inc.
- Info:** mixed mode
- Architecture:** 32 bit

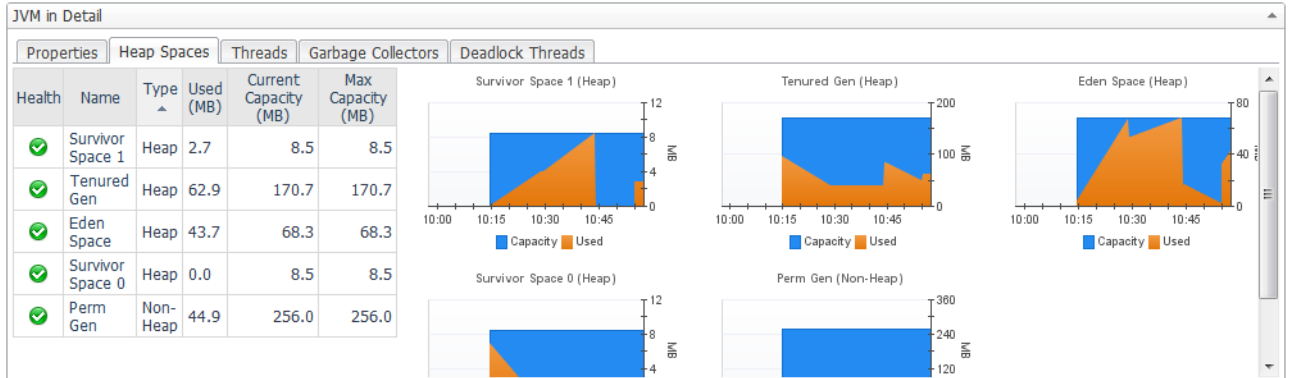
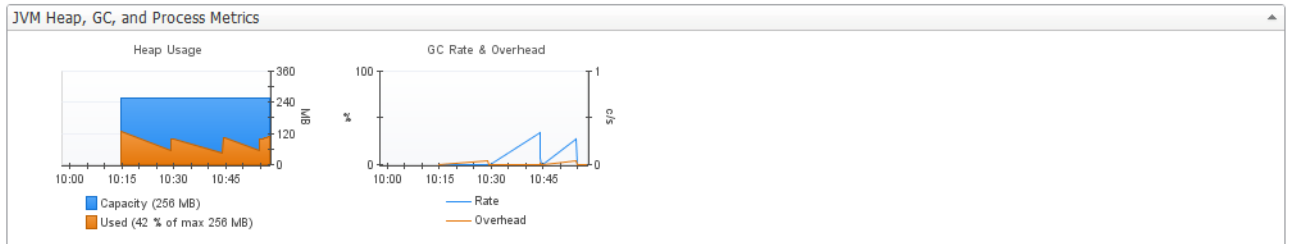
The pop-up also includes two graphs:

- Heap Usage:** A bar chart showing heap usage over time. The capacity is 256 MB, and the current usage is 41% of the maximum (approximately 105 MB).
- GC Rate & Overhead:** A line graph showing the garbage collection rate and overhead percentage over time.

System - WebLogic: 81sp6Domain [mp-jimm...
Admin Server: adminServer
Server: adminServer

Java Virtual Machine on adminServer

Health: ✔ Alarms: □□□ Changes: 13 local



掌握 AP Server 應用程式的 App Tier 及 Database Tier 的效能問題

最常被問到的問題為程式為何會慢?慢在哪邊?哪支程式慢?可以指出來給我看嗎?

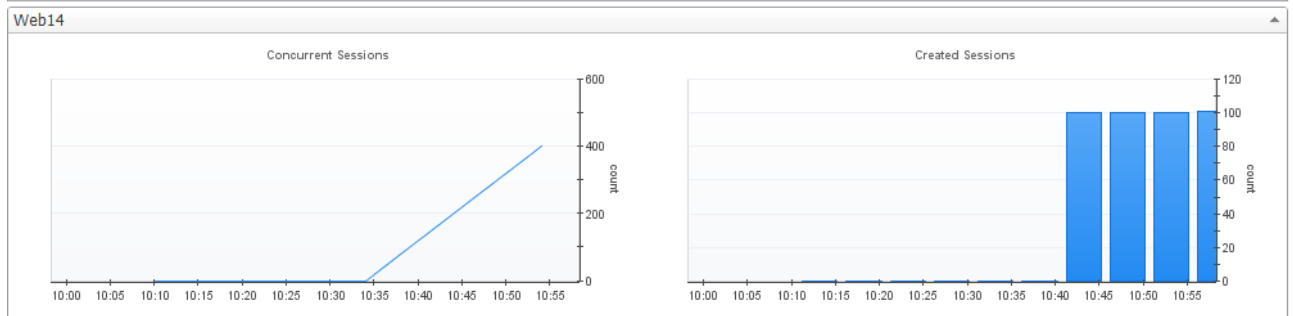
Foglight 除了監看 Web App 的 session 數量, JSP/Servlet 的 request time/response time 外, 還針對此問題提供了 Sampled Breakdown 功能, 可以將 App 端及 Database 端兩邊的 Performance 各別呈現, 也針對 SQL Trace 功能監看 SQL Statement 的執行時間。

System - WebLogic: 81sp6Domain [mp-jimm...]
Admin Server: adminServer
Server: adminServer

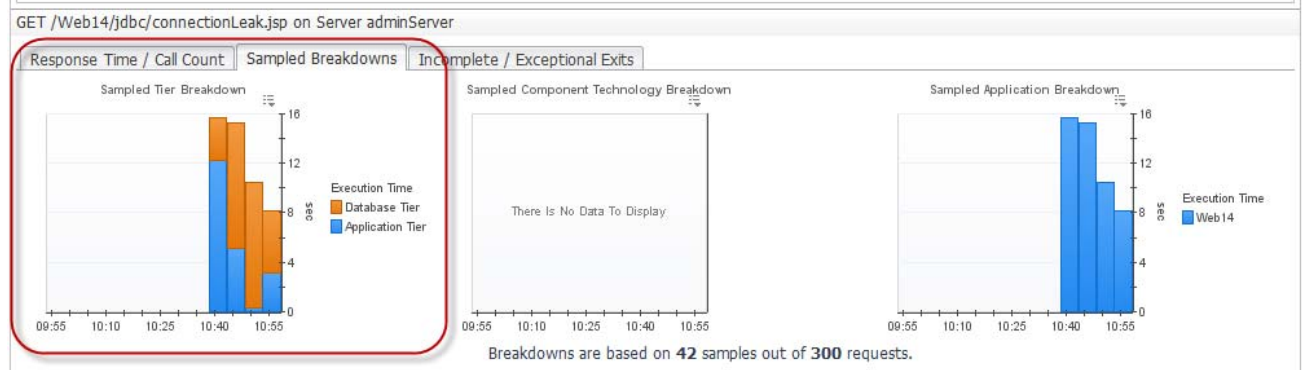
Web Applications for adminServer

Health: ✔ Alarms: □ □ □ Changes: 35 local

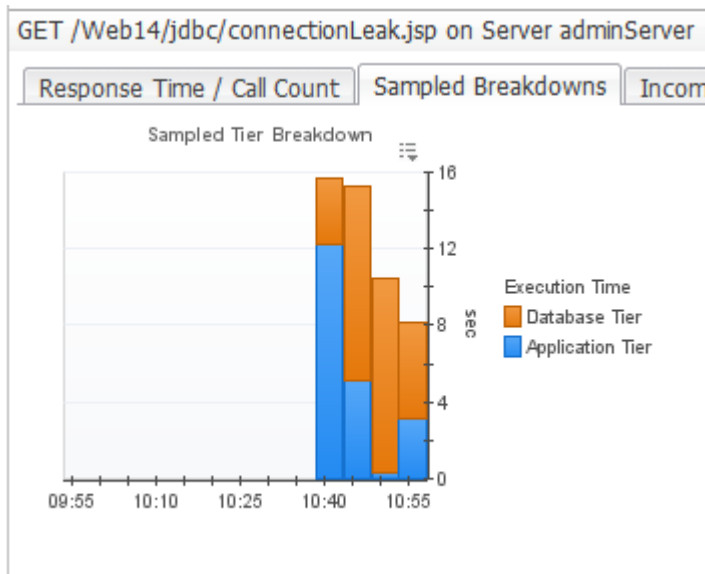
Health	Name	Context Root	Status	Source Information	Application	Concurrent Sessions CURRENT	Created Sessions TOTAL	JSP/Servlet Health
✔	caveatemptor	/caveatemptor	Activated	caveatemptor.war	caveatemptor	0	0	
✔	Web14	/Web14	Activated	Web14.war	Web14	401	401	✔
✔	WLS81AutoThreadDump	/WLS81AutoThreadDump	Activated	WLS81AutoThreadDump.war	WLS81AutoThreadDump	0	0	



Request Name	Health	System	Context	Calls Total	Response Time (s)			Investigate (%)		
					Current	Avg	Max	Total	Incomplete	Exception Exits
GET /Web14/jdbc/connectionLeak.jsp	⚠	adminServer (WebLogi...)	/Web14	300	7.946	10.822	14.382	3,246.554	0.00	83.33
GET /Web14/HttpSnoop.do	✔	adminServer (WebLogi...)	/Web14	301	0.938	0.945	1.281	284.451	0.00	0.00
POST /Web14/SQLQuery.do	✔	adminServer (WebLogi...)	/Web14	100	11.444	11.188	12.202	1,118.828	0.00	0.00
GET /Web14/ejb/index.jsp	✔	adminServer (WebLogi...)	/Web14	600	0.164	0.348	3.251	208.769	0.00	0.00
GET /Web14/encoding/encodingDemo1.jsp	✔	adminServer (WebLogi...)	/Web14	300	0.083	0.087	0.465	26.038	0.00	0.00
GET /Web14/SystemProperties.do	✔	adminServer (WebLogi...)	/Web14	300	1.086	1.060	1.540	317.874	0.00	0.00
GET /Web14/	✔	adminServer (WebLogi...)	/Web14	1	0.144	0.144	0.144	0.144	0.00	0.00



由下圖中清楚得知程式在 App Tier 及 Database Tier 所花費的時間。除此之外也提供了程式發生錯誤率的統計及未完成執行過久的 request 做統計，可讓管理者完完全全掌握程式的效能。



SQL Trace 方面 Foglight 採用手動或是自動的方式，自動方式利用 Foglight Rule 及 Action 功能，只要設定好條件，Foglight 自動依據條件而主動 Trace SQL；手動方式則可依管理者需求，設定條件後啟動便可 Trace SQL。

Collect Traces With Criteria

Request: POST /Web14/SQLQuery.do

Track SQL Parameters: on

Duration: 600 seconds

Collect 5 trace(s) with response time over 10.0 seconds

Collect 5 trace(s) with response time under 5.0 seconds

Collect 5 trace(s) with exceptional exits

Collect 5 incomplete trace(s)

Select All Select None Submit

<input type="checkbox"/>	Name	Host
<input checked="" type="checkbox"/>	adminServer	mp-jimmyliao.mpinfo.com.tw

Collect

SQL Statement	Execute Count	Execution Time (s/execute)		
		Total	Avg ▼	Max
MySQL jdbc:weblogic:pool:MySQL	5	0.002	0.000	0.000
select 100 limit 0, 1	5	0.002	0.000	0.000