

Moodle Network的效能研究

銘傳大學資訊網路處 陳信宏 2010/04/30

報告大綱

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Moodle Network

銘傳環境架構

效能分析

結語

Moodle Network

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- 適用於Moodle 1.8以上
- 將各個獨立的Moodle系統連接在一起
 - ▣ 讓使用者在多個 Moodle 網站間漫遊
- 通信協定是 XML-RPC
 - ▣ 採用XML非對稱式加密方式

單點登入、資源共享

Moodle Network 架構

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- 點對點網路架構
 - 彼此互相交換訊息
 - 使用者互相漫遊
 - 加入遠端課程
- 社群中心
 - 為各個獨立Moodle網站提供連結服務
 - 透過此中心漫遊
 - 透過此中心加入其他遠端課程

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銘傳環境架構

為何需要分群

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課程數已是全球第七

每日登入人次皆於三萬上下

學校主要的教學平台

單一系統負荷過大

課程數已是全球第七

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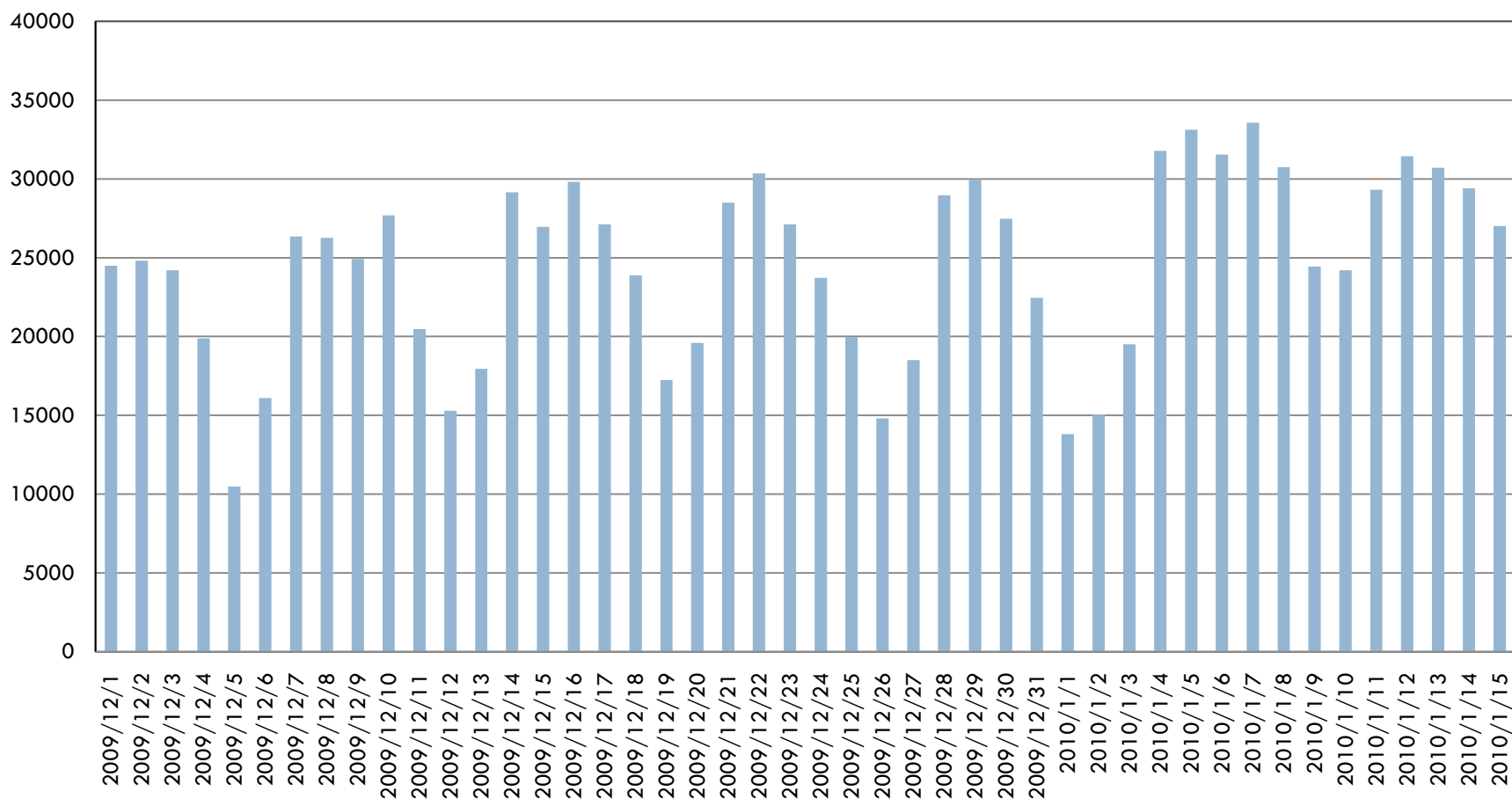
Top 10 sites by courses

| Site | Users | Courses |
|--|--------|---------|
| VDU Moodle | 3,566 | 59,920 |
| Minha UFMG | 54,371 | 45,921 |
| Academy School District 20 | 2,616 | 31,977 |
| UNCC Moodle | 60,319 | 26,112 |
| Universidade Presbiteriana Mackenzie | 54,978 | 23,813 |
| ATENEA - Campus Virtual de la UPC | 70,474 | 21,948 |
| Ming Chuan University portal(銘傳大學入口網站) | 62,027 | 21,338 |
| Concordia Course Web Sites | 95,219 | 17,999 |
| Idaho State University - Moodle ISU | 24,786 | 15,942 |
| UNCC Moodle | 58,033 | 14,326 |

每日登入人次皆於三萬上下

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login 人次 2009/12~2010/01



銘傳大學分群演進

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95學年下學期

銘傳大學

97學年下學期

銘傳大學

資訊學院

98學年上學期

銘傳大學

管理學院

資訊學院

98學年下學期

銘傳大學

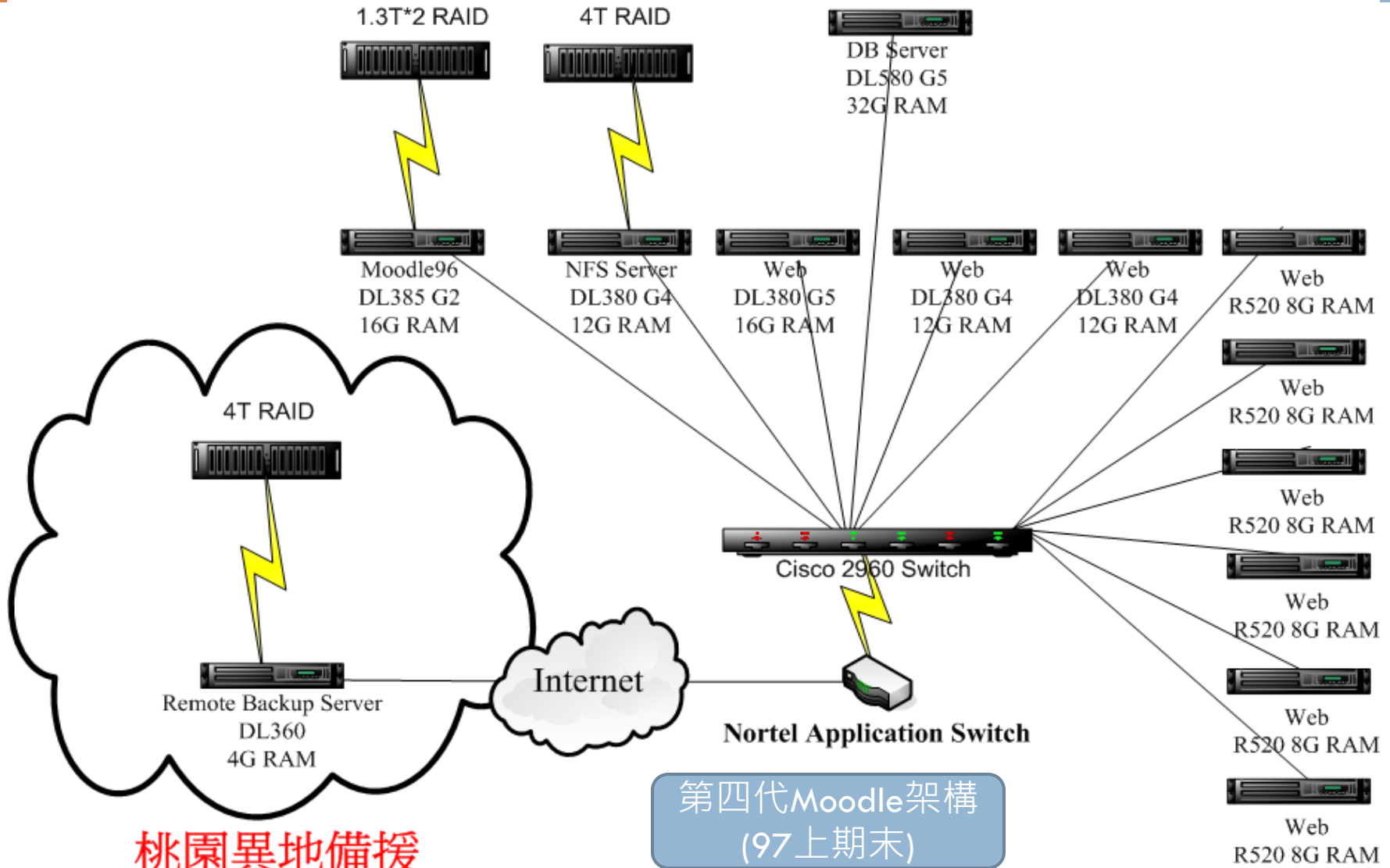
語文學院

管理學院

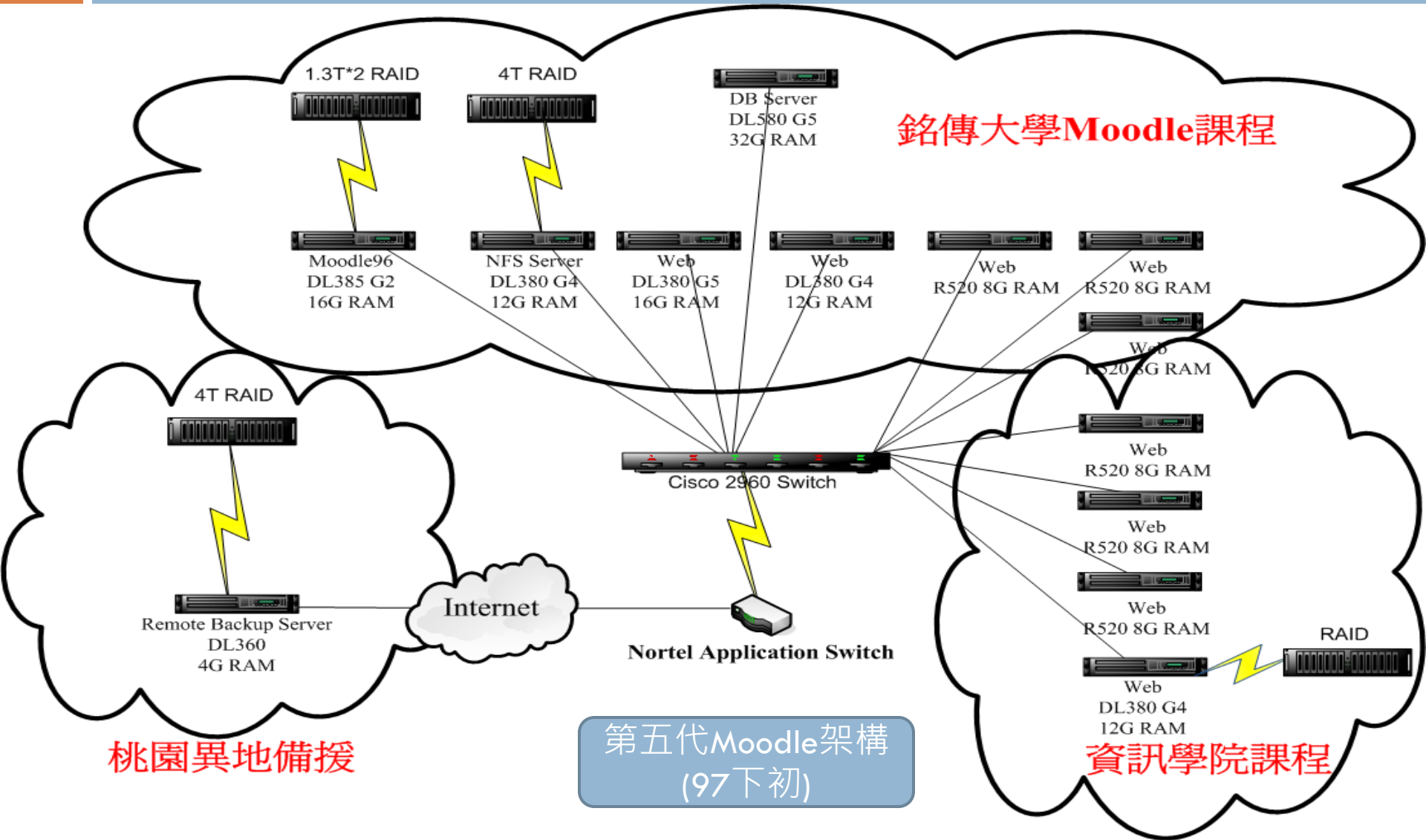
資訊學院

數位教學架構演進(第四代)

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數位教學架構演進(第五代)



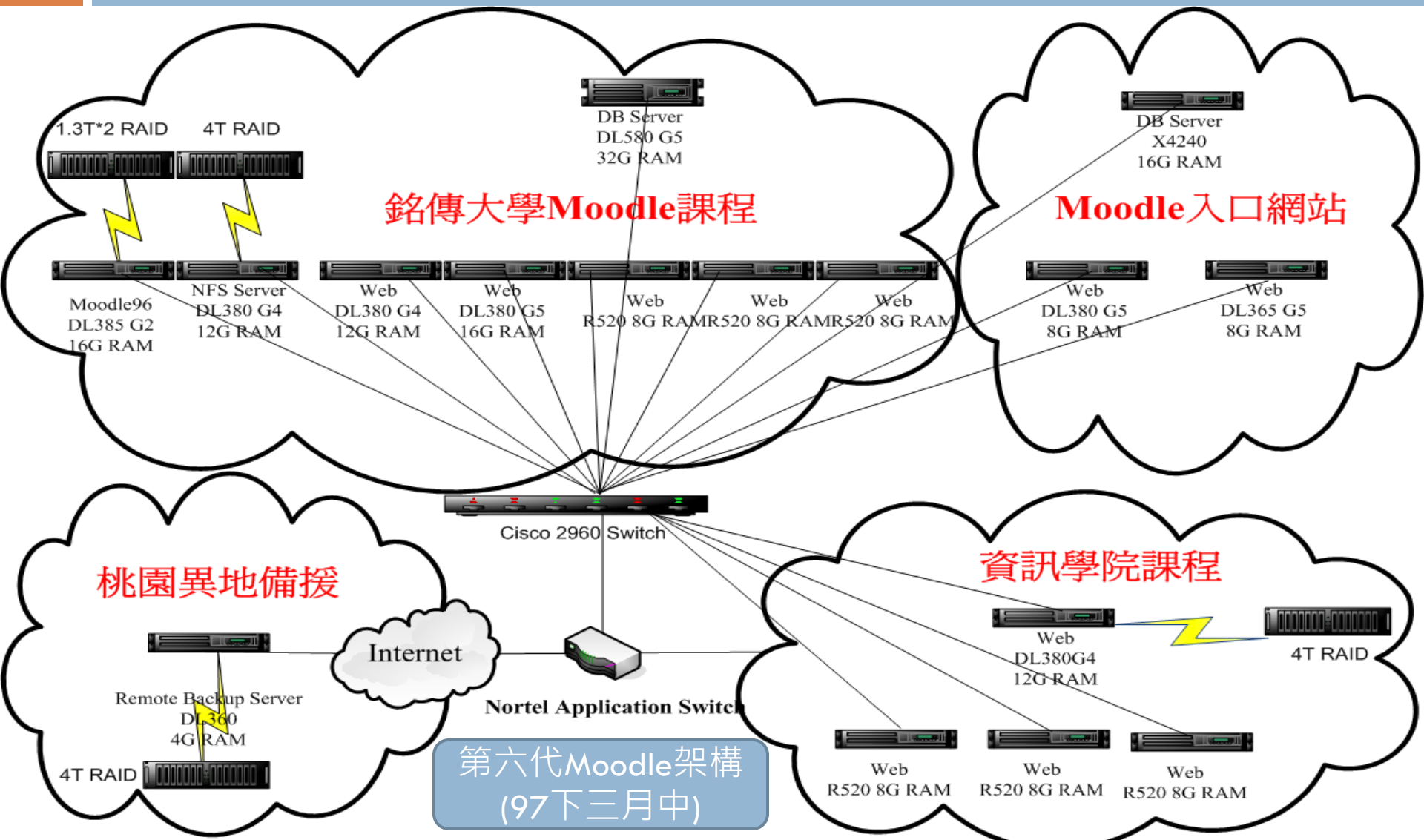
桃園異地備援

第五代Moodle架構
(97下初)

資訊學院課程

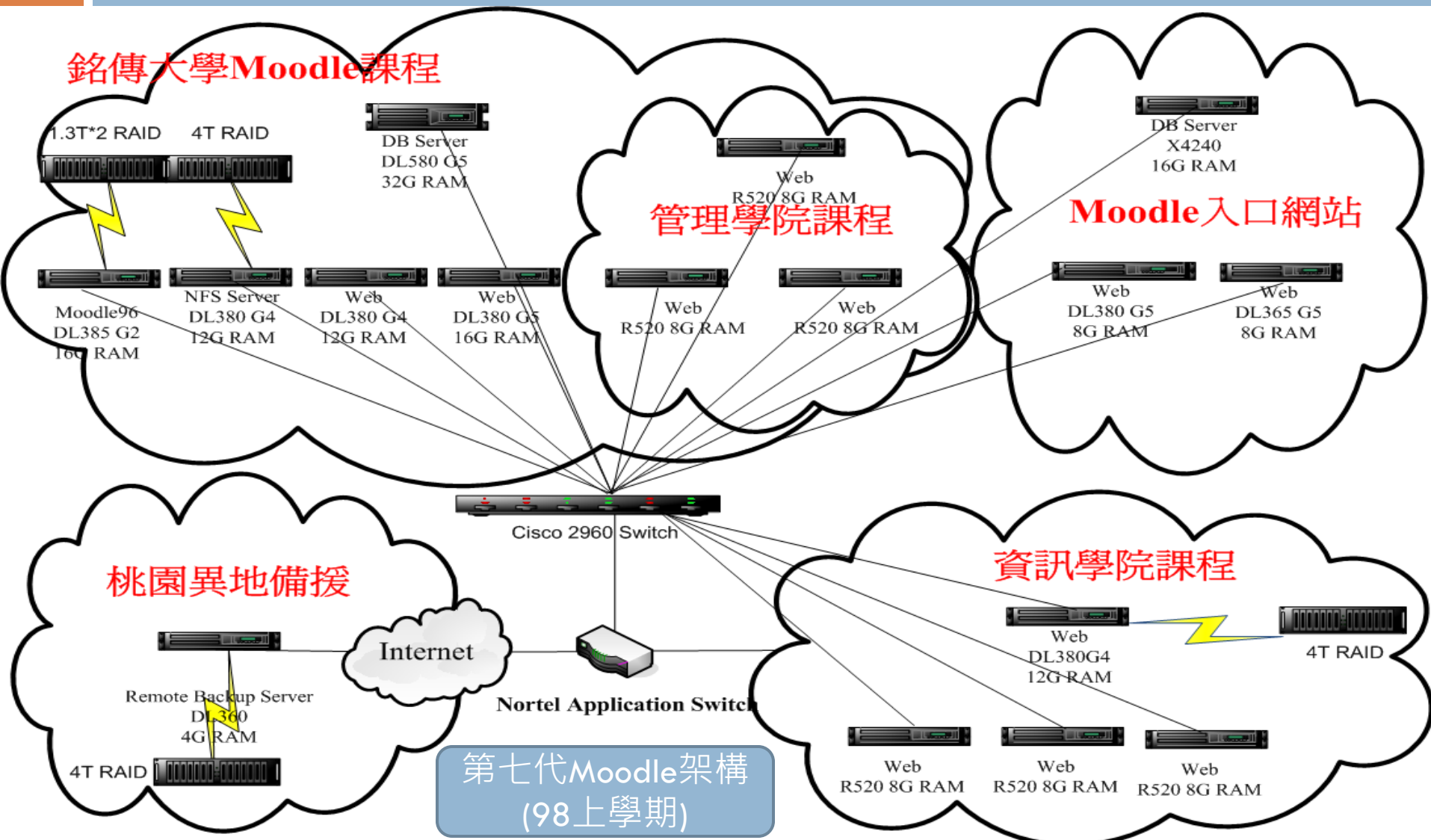
數位教學架構演進(第六代)

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數位教學架構演進(第七代)

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效能分析

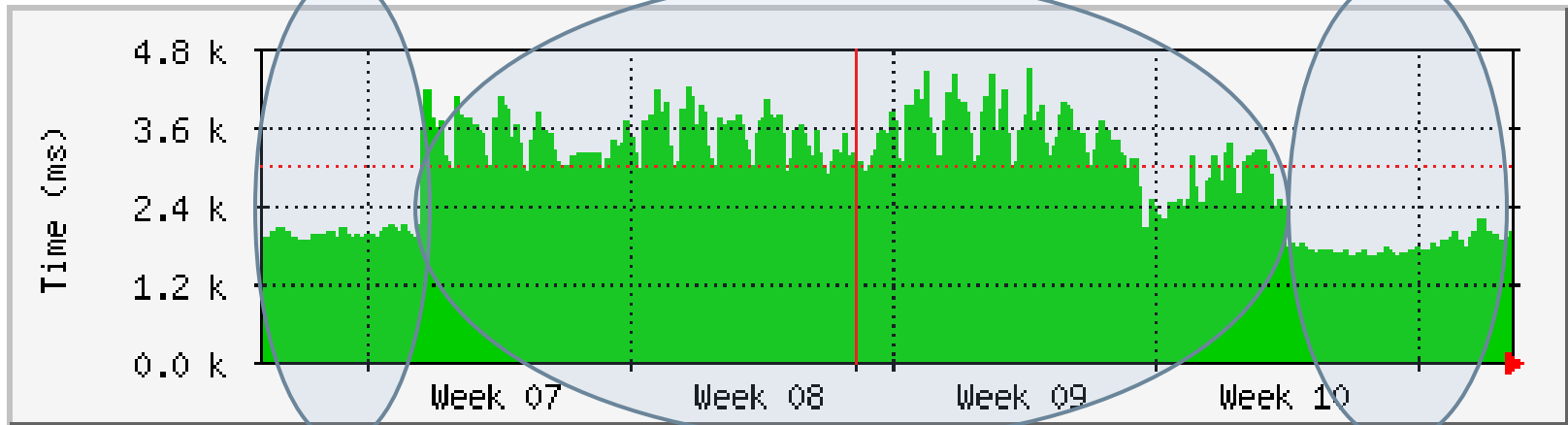
效能提升

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□ 網頁存取速度提升

第五代Moodle架構存取速度
(97下學期)

第六代Moodle架構存取速度
97下學期開學第四週



寒假期間

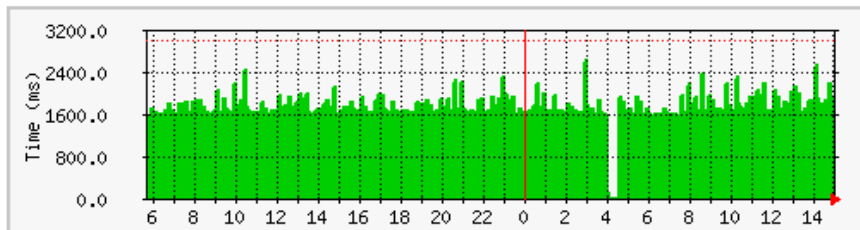
開學前三週

更新新架構

效能提升-網頁反映時間加快

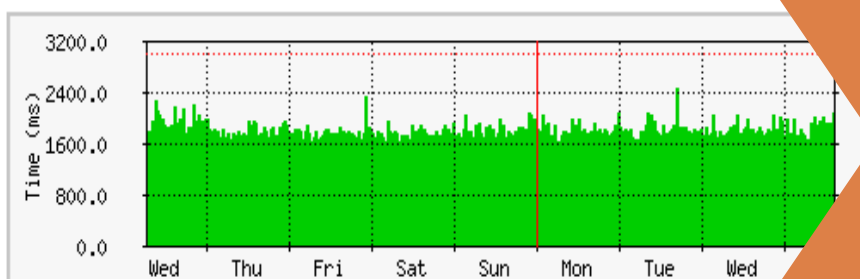
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'Daily' Graph (10 Minute Average)



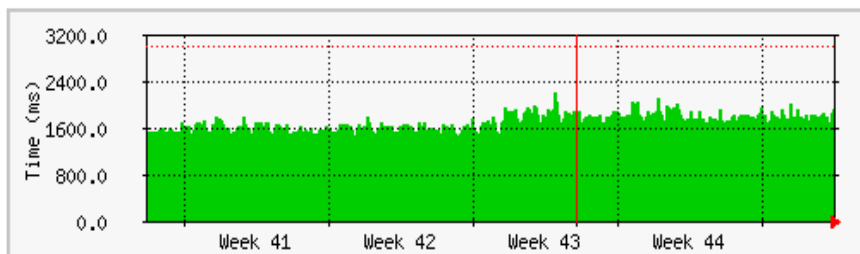
Max LWP 2679.0 ms Average LWP 1803.0 ms Current LWP 1930.0 ms

'Weekly' Graph (30 Minute Average)



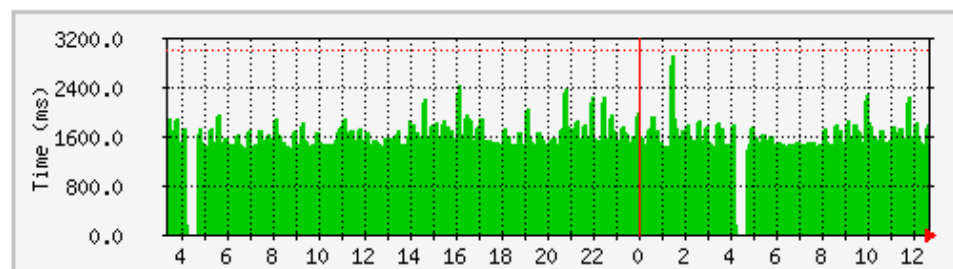
Max LWP 2478.0 ms Average LWP 1779.0 ms Current LWP 2095.0 ms

'Monthly' Graph (2 Hour Average)



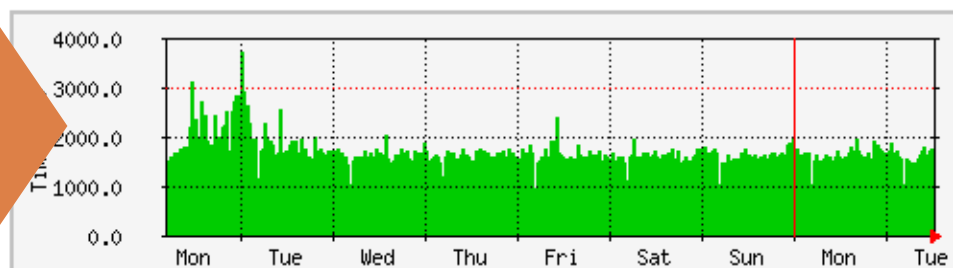
Max LWP 2208.0 ms Average LWP 1680.0 ms Current LWP 1923.0 ms

'Daily' Graph (10 Minute Average)



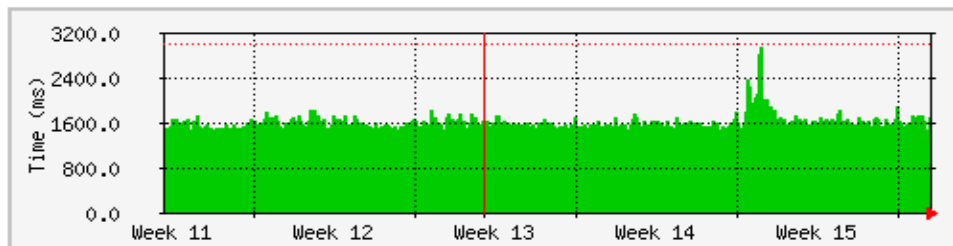
Max LWP 2916.0 ms Average LWP 1599.0 ms Current LWP 1651.0 ms

'Weekly' Graph (30 Minute Average)



Max LWP 3753.0 ms Average LWP 1676.0 ms Current LWP 1612.0 ms

'Monthly' Graph (2 Hour Average)

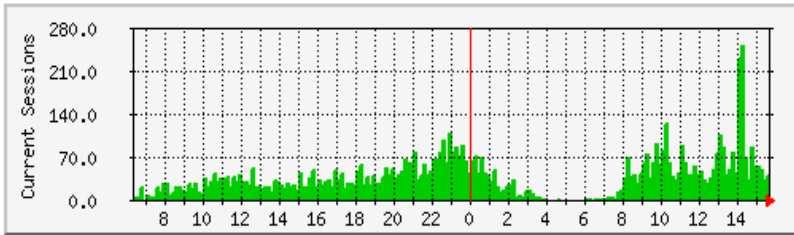


Max LWP 2969.0 ms Average LWP 1589.0 ms Current LWP 1702.0 ms

效能提升-同時間使用者連線數

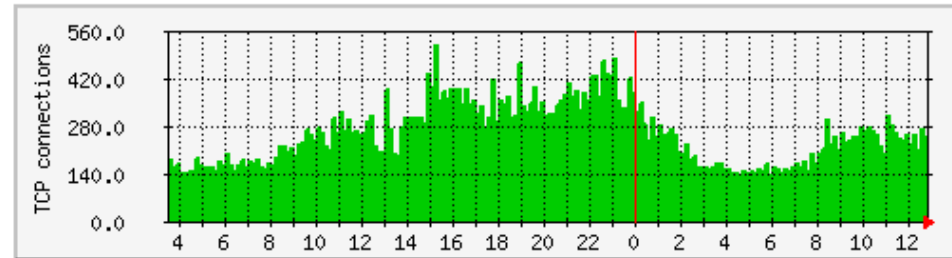
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'Daily' Graph (5 Minute Average)



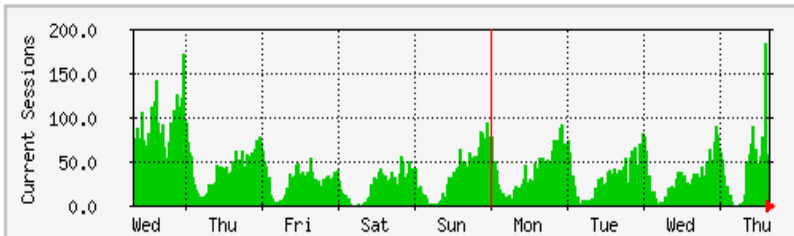
Max Sessions (last 5 mins) 253.0 Average Sessions (last 5 mins) 39.0 Current Sessions (last 5 mins) 42.0

'Daily' Graph (10 Minute Average)



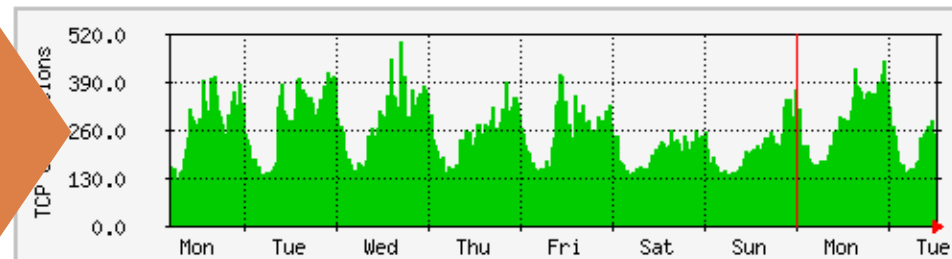
Max TCP 523.0 Average TCP 263.0 Current TCP 255.0

'Weekly' Graph (30 Minute Average)



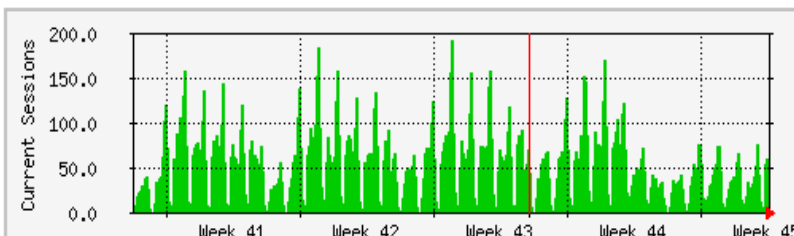
Max Sessions (last 5 mins) 185.0 Average Sessions (last 5 mins) 39.0 Current Sessions (last 5 mins) 42.0

'Weekly' Graph (30 Minute Average)



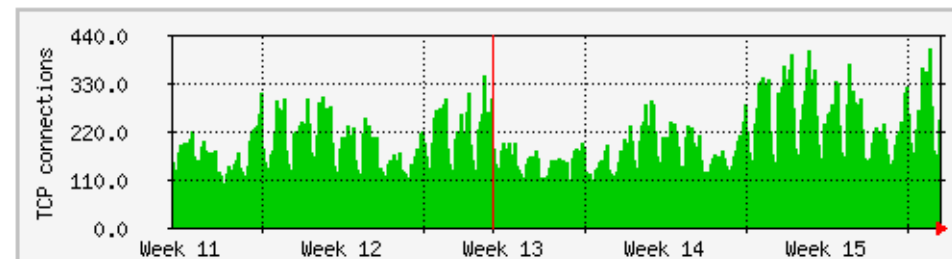
Max TCP 500.0 Average TCP 253.0 Current TCP 237.0

'Monthly' Graph (2 Hour Average)



Max Sessions (last 5 mins) 192.0 Average Sessions (last 5 mins) 51.0 Current Sessions (last 5 mins) 58.0

'Monthly' Graph (2 Hour Average)



Max TCP 410.0 Average TCP 198.0 Current TCP 248.0

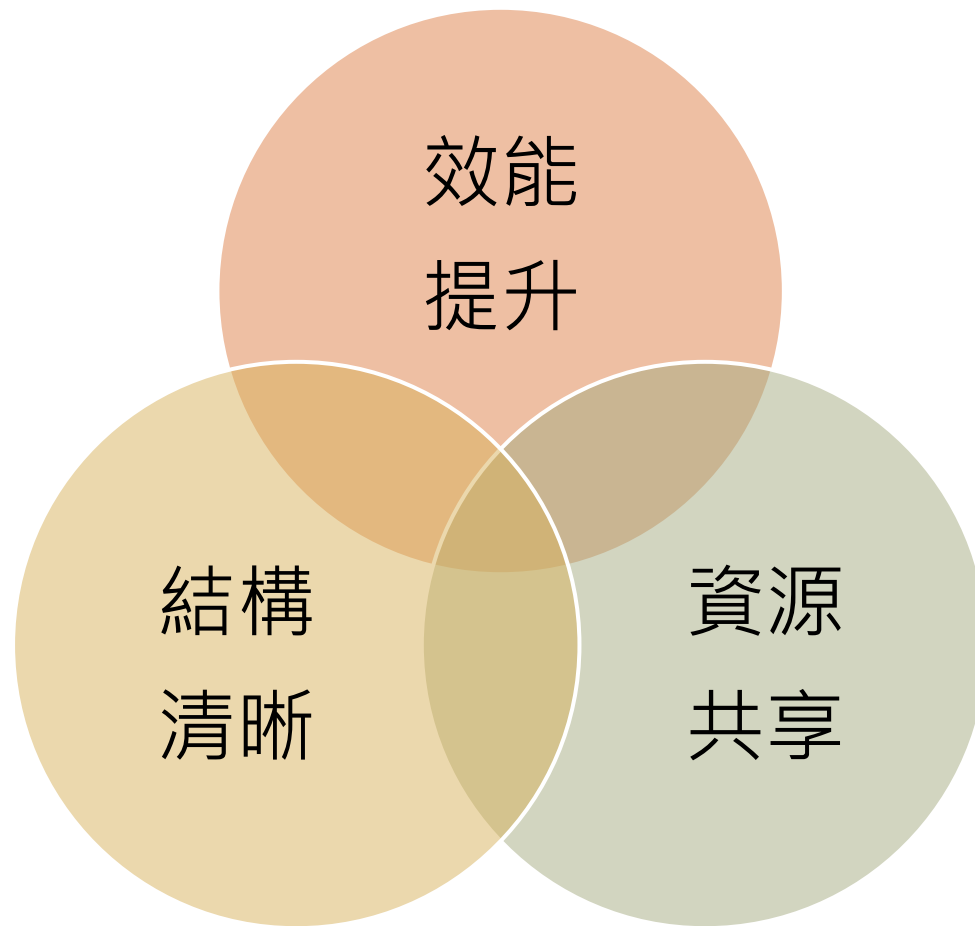
遭遇的阻礙

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- 分群的切割準則
- 環境變化，需重新教育使用者
- 舊有資料的连接與備份
- 資訊系統資料的匯入
- 統計資料複雜

結語

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謝謝聆聽
敬請指教