

# ルータサイド・スクリプト言語の トラフィックエンジニアリングへの応用例

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# ネットワーク概要

## Large-scale Data Center Network



Windows Azure



Windows 7



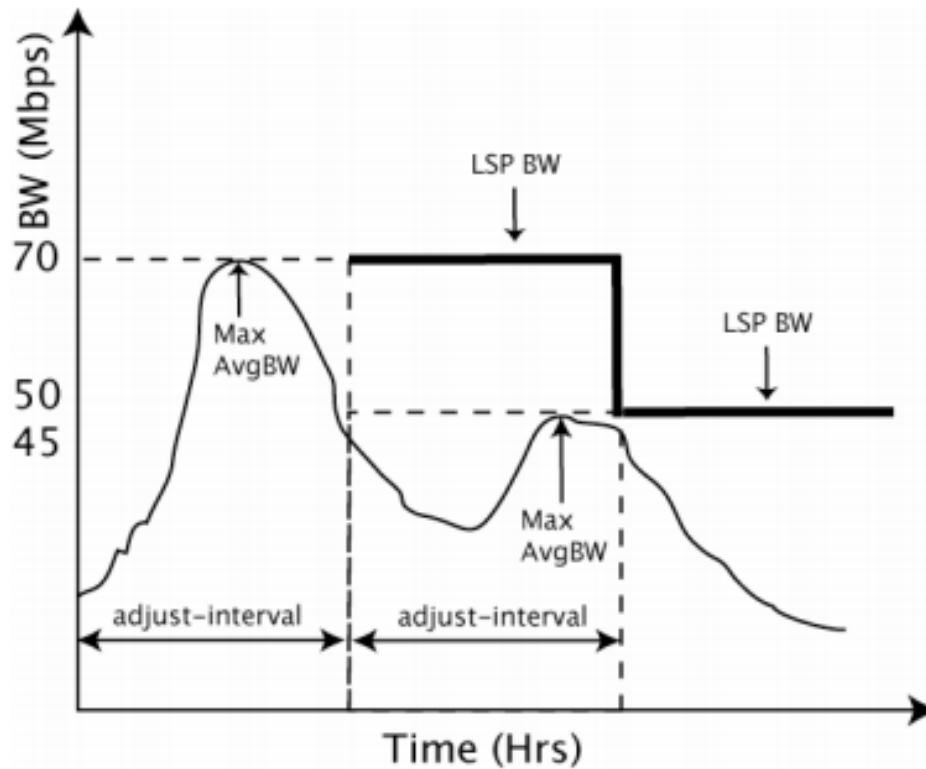
Windows Update



Windows Live Mesh 2011

# Auto-bandwidth

実トラフィックに応じて、LSPの帯域を調整



# JUNOScript言語について

- 仕様
  - SLAX 1.0 based on XSLT(XSL Transformations)
- 資料
  - <http://www.janog.gr.jp/meeting/janog25/program/rscript.html>
- 種類
  - OpScript – 手動起動するスクリプト
  - CommitScript – Commit時に起動
  - EventScript – 指定したトリガーによる起動
  - Perl – 外部から起動

## JUNOS Automation Series

<http://www.juniper.net/us/en/community/junos/training-certification/day-one/automation-series/>

## Junos Automation Reference for SLAX 1.0

<http://forums.juniper.net/t5/Day-One-Books/This-Week-Junos-Automation-Reference-for-SLAX-1-0/ba-p/99650>

## JUNOS XML API Operational Reference

[http://www.juniper.net/techpubs/en\\_US/junos10.4/information-products/topic-collections/junos-xml-ref-oper/index.html](http://www.juniper.net/techpubs/en_US/junos10.4/information-products/topic-collections/junos-xml-ref-oper/index.html)

## Sample Code

<http://www.juniper.net/us/en/community/junos/script-automation/library/>

## SLAX

<http://code.google.com/p/libslax/>

# EventScript起動条件の定義

## 数千種類の起動トリガー

```
> help syslog
```

```
Syslog tag                Help
ACCT_ACCOUNTING_FERROR    Error occurred during file processing
ACCT_ACCOUNTING_FOPEN_ERROR  Open operation failed on file
ACCT_ACCOUNTING_SMALL_FILE_SIZE  Maximum file size is smaller than record size
ACCT_BAD_RECORD_FORMAT      Record format does not match accounting profile
.....
```

```
> help syslog RPD_MPLS_PATH_BANDWIDTH_CHANGE
```

```
Name:          RPD_MPLS_PATH_BANDWIDTH_CHANGE
Message:       MPLS path <pathname> (lsp <lsp-name>) bandwidth changed,
               path bandwidth <bandwidth> bps
Help:          MPLS path bandwidth changed
Description:   The bandwidth associated with the indicated Multiprotocol Label Switching (MPLS) path
               changed.
Type:          Event: This message reports an event, not an error
Severity:      warning
```

# 今回実装したコードについて

規模：数千行

コードの30%は安全措置用

