Wireless LAN service in AsiaBSDCon 2016 by SA-W2

2016/03/11
AsiaBSDCon 2016 NetBSD BoF

Internet Initiative Japan Inc.
SEIL team
SA-W2
What’s SA-W2

- New wireless LAN router
  - Successor model of SA-W1
SA-W1
SA-W1
SA-W2
### The difference between SA-W1 and SA-W2

<table>
<thead>
<tr>
<th></th>
<th>SA-W1</th>
<th>SA-W2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SoC</td>
<td>Marvell Kirkwood (88F6281)</td>
<td>Marvell ARMADA 380 (88F6810)</td>
</tr>
<tr>
<td>CPU Core</td>
<td>ARMv5TE 1.2GHz</td>
<td>ARMv7 1GHz</td>
</tr>
<tr>
<td>RAM</td>
<td>DDR2-800 128MB 16bit</td>
<td>DDR3-1600 256MB 32bit</td>
</tr>
<tr>
<td>802.11</td>
<td>Qualcomm Atheros AR9287(b/g/n)</td>
<td>Qualcomm Atheros AR9287(b/g/n) QCA9880(a/n/ac)</td>
</tr>
<tr>
<td>PoE</td>
<td>N/A</td>
<td>802.3af (powered only)</td>
</tr>
<tr>
<td>USB</td>
<td>2x USB 2.0 (with internal hub)</td>
<td>2x USB 2.0 (with internal hub)</td>
</tr>
</tbody>
</table>
## The difference between Kirkwood and ARMADA 380

<table>
<thead>
<tr>
<th></th>
<th>Kirkwood (88F6281)</th>
<th>ARMADA 380 (88F6810)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Core</td>
<td>Sheeva 88SV131 1core</td>
<td>Cortex-A9 1core</td>
</tr>
<tr>
<td>L1 cache</td>
<td>I: 16KB, D: 16KB 4way</td>
<td>I: 32KB, D: 32KB 4way</td>
</tr>
<tr>
<td>L2 cache</td>
<td>256KB 4way</td>
<td>1MB 16way</td>
</tr>
<tr>
<td>Ethernet</td>
<td>2x GbE</td>
<td>2x GbE</td>
</tr>
<tr>
<td>USB</td>
<td>1x USB 2.0</td>
<td>2x USB 3.0, 1x USB 2.0</td>
</tr>
<tr>
<td>PCIe</td>
<td>1x (PCIe 1.1 x1)</td>
<td>3x (PCIe 2.0 x1)</td>
</tr>
<tr>
<td>Cryptographic</td>
<td>3DES/AES/SHA1</td>
<td>3DES/AES/SHA-1/SHA-2</td>
</tr>
<tr>
<td>accelerator</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Performance

**L3 VPN:** IPsec I/F AES-SHA1 1 session both-direction
RFC 2544 Frame size 512 and 1408 bytes (Tunnel end: BPV4)
Merge status

• Merged
  • For ARMADA XP and newer
    • mvxpe(4): New Ethernet driver
    • mvxpsec(4): New cryptographic accelerator driver
• Not Merged yet
  • For ARMADA 380
    • Identify code for ARMADA 380
    • bus_dma related
    • ARMADA specific interrupt controller
Wireless LAN service in AsiaBSDCon 2016
purpose, objective, motivation

• To make the venues wireless network stable than before.
• Construct network by developer themselves.
  • To get know-how
• Test our product in real field 😊
  • To test under many clients
logical
Physical
Overall

- The Internet
- SEIL/x86 Virtual Router
- Internet GW & NAT
- SEIL/BPV4
- IPsec GW
- SA-W2
- Wireless AP
- Switch
- PoE or non-PoE
- Monitor Server

IPsec Tunnel

B1F IIJ NOC

B1F Room A

1F Lounge

1F Lobby

1F Room B

2F Room C

Morito Memorial Hall
Demo(weathermap)
Wireless LAN service

• If you get any trouble with this service, please contact to people who are in IIJ’s booth.
• Please come to IIJ’s booth on Saturday and Sunday to see the demo.
• Have fun!