HPCN in China

* **NCIC** (National Research Center for Intelligent Computer Systems)
  - located in Beijing
  - Research topics:
    - **Hardware:** SMP and MPP
    - **Software:** OS, Prog. Environment

* **FUDAN University** (Institute of Parallel Processing)
  - located in Shanghai
  - Research topics:
    - **Software:** parallelizing compiler

* **JIAO TONG University**
  - located in Shanghai
  - Research topics:
    - **Software:** HPF compiler
NCIC

* R&D Center on advanced Computer Technology
  → funded by the 863 program

* R&D achievements
  → first China-made SMP (1993)
  → first China-made MPP (1995)

* Collaboration
  → Motorola (joint laboratory)
  → started in 1996

* Human resources
  16 PhD
  → 80 employees
  { 30 MS

* Technology transfer
  → Dawning Information Industry Corp.
    (June 1993)
  → to sale SMPs and MPPs goal:
    (10% of the Chinese HPC market)
    1996: 250-300 units
    1997: ~ 1000 units
  → Products
    - Dawning - I (SMP)
    - Dawning 1000 (MPP)

1000 plus
## NCIC Projects and Dawning Products

<table>
<thead>
<tr>
<th>SMP</th>
<th>MPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Dawning - 1 (4-16 processors)</td>
<td>- Dawning 1000 (32)</td>
</tr>
<tr>
<td>- Dawning - 2</td>
<td>- Dawning 1000 plus (64)</td>
</tr>
<tr>
<td></td>
<td>↓ (32 - 128)</td>
</tr>
<tr>
<td></td>
<td>↓ → 256</td>
</tr>
<tr>
<td></td>
<td>↓</td>
</tr>
<tr>
<td>Research</td>
<td>SMP MPP</td>
</tr>
<tr>
<td>projects</td>
<td>- Dawning 3000</td>
</tr>
<tr>
<td>S863</td>
<td>↓</td>
</tr>
<tr>
<td></td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>goal: 1 Teraflop</td>
</tr>
</tbody>
</table>
Conclusion

* HPCN Technology is considered very important by Chinese authorities
  → scientific and engineering computation
  → OLTP application

* NCIC will play an important role
  → involvement in 863 high-tech R&D program
  → future program (S-863): 1998 → 2010

* Dawning Corporation is an important player in the HPC market in China
  → existing product (Dawning-1, 1000, 1000 plus)
  → future product (Dawning-2, 2000, 3000, ...)

* Support from SSTCC, Ministry of Electronic Industry and MOFTEC