



IBM Linux

Unix to Linux Migration

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IBM

Linux



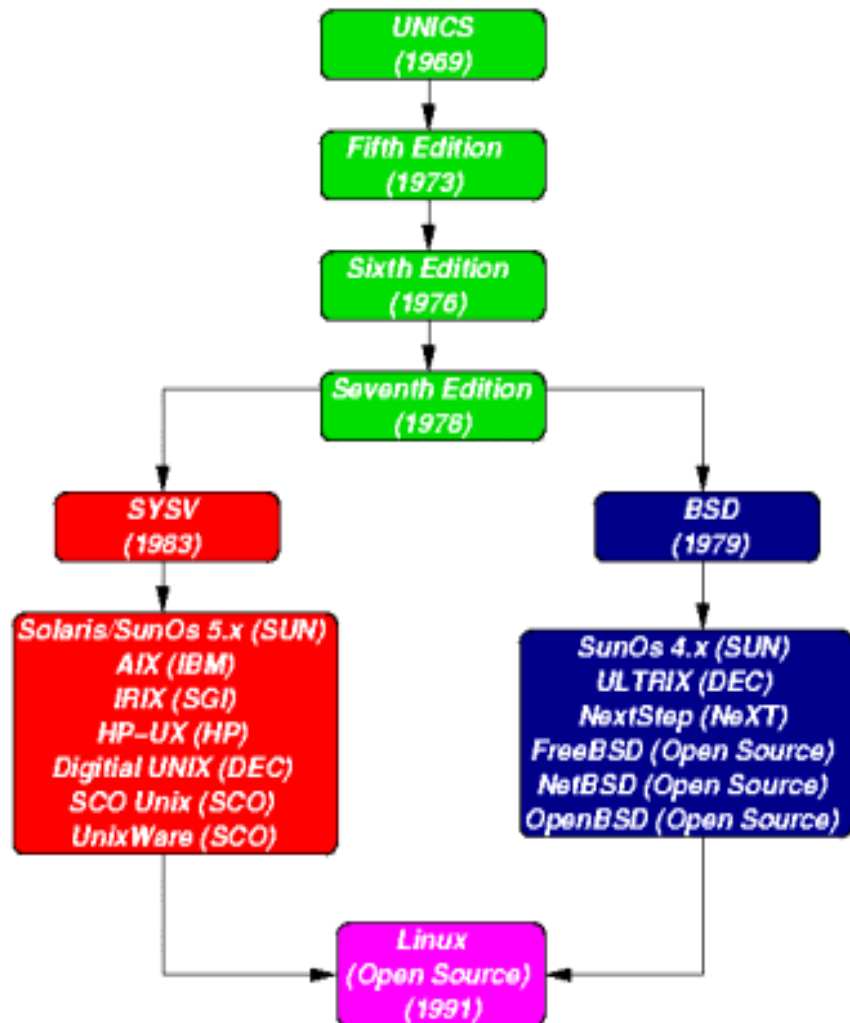
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- **Kernel :** BSD, SYSV system calls , POSIX.1
- **Shell :**
- **System Utility :**
- **Application :** gcc, g++, javac, vi, emacs, make, gdb/dbx, perl, etc

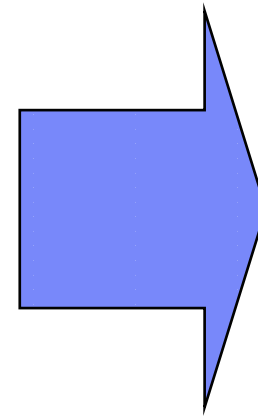
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No.1 OS
in the future



Linux Kernel 2.6

Feature	Linux 2.6 kernel	Provides
Native Posix Thread Library (NPTL)	Yes	High performance POSIX compliant multi-threading
Kernel IPsec	Yes	IPsec layer available for use by kernel modules
Asynchronous I/O (AIO)	Yes	Improved application performance
O(1) Scheduler	Yes	Highly scalable SMP scheduler
OProfile	Yes	CPU-hardware-based performance monitoring
kksymoops	Yes	Improved kernel bug reporting
Reverse Map Virtual Memory (rmap VM)	Yes	Performance improvement in memory constrained systems
HugeTLBFS	Yes	Performance improvement for large virtual memory applications (e.g. Databases)
Remap_file_pages	Yes	Kernel memory optimization for shared memory applications
2.6 Network stack features (IGMPv3, Ipv6, etc.)	Yes	Improved network performance & messaging

Linux Kernel 2.6

Feature	Linux 2.6 kernel	Provides
IPv6	Yes	Network load balancing
Access Control Lists (ACLs)	Yes	Improved file system security management
4GB-4GB memory split	No	Greatly increased x86 physical memory support and larger application address space
Scheduler support for hyperthreaded CPUs	No	Improved hyperthreaded CPU performance. (2.6 implementation not yet comparable)
Block I/O (BIO) block layer	Yes	Major rewrite of the I/O subsystem (stabilization and driver support in progress)
Support for > 2TB file system	Yes	Support for very large volumes. Red Hat Enterprise Linux 3 supports up to 1 TB.
New I/O elevators	Yes	Fine tuning for I/O subsystem performance (stabilization in progress)
Interactive scheduler response tuning	Yes	Scheduler improvements for interactive tasks (stabilization in progress)

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Approach to Migration

- Develop horizontal Linux strategy in advance of development
- Identify selected environments for vertical Linux proof-of-concept projects

Pilot Project Phase

- Determine status of required ISV software dependencies
- Perform initial customized install of Linux software and hardware
- Begin determination of IT components which can be migrated quickly and easily
- Port and test initial application
Test Linux as part of existing infrastructure
- Begin documentation on overall Linux deployment methodology
- Develop overall migration cost model

Rollout Phase

- Finalize strategy for mass deployment of Linux software and hardware
- Begin rollout of infrastructure replacement components
- Begin widespread application porting
- Perform final deployment QA
- Train system administrators and developers
- Begin all across rollout

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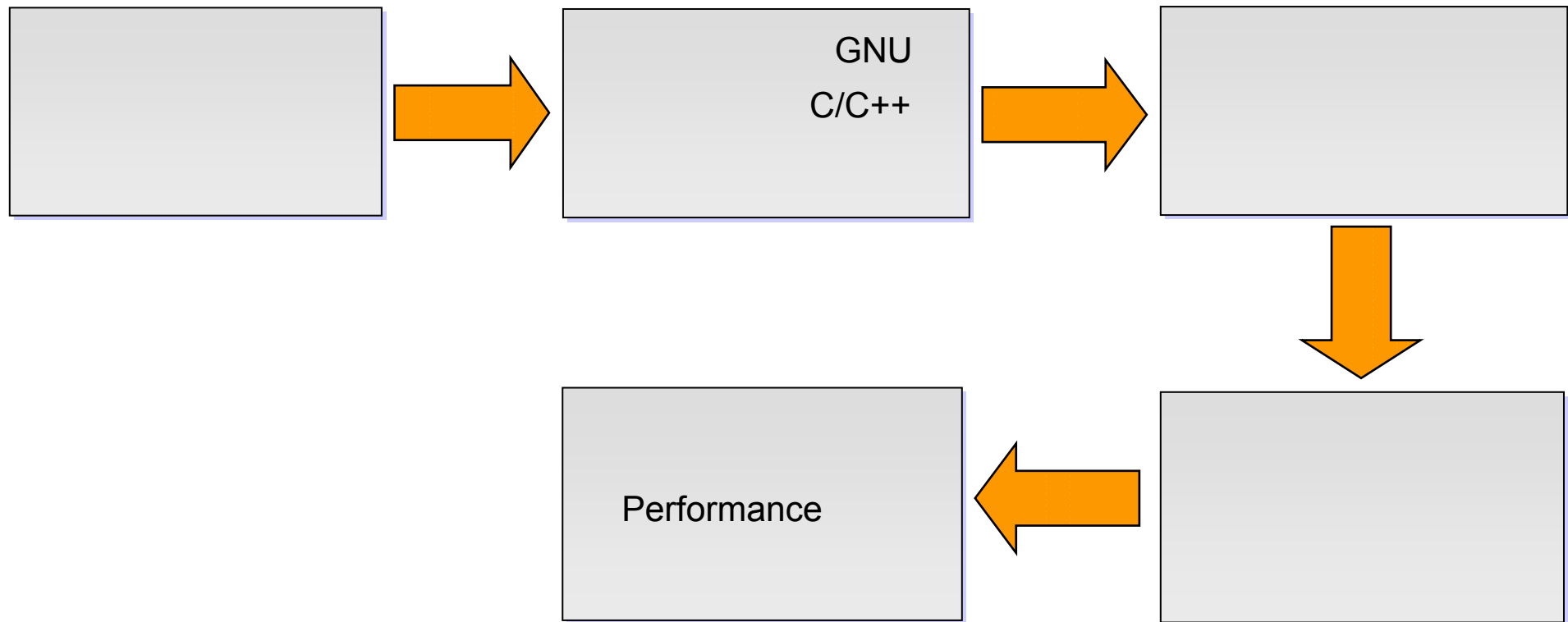
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Step 1 :**GNU****C/C++**

1.

- ▶ GNU
- ▶ make
 - GNU make
 - Sun make
- ▶
 - GCC
 - Sun C, Sun C++

2.

make

GNU make

3. makefile

gmake

, C

4.

5.

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Step 2 :

1. SUN 가

2. GNU

3.

4.



Step 3 :

- 4.

makefile



Step 3 :

- - ▶
- - ▶ GCC 77 , 90/95
-
- - ▶ (call) C , ACL ,
 - ▶
- API



Step 3 :

- C++
- Math
- X
 - ▶ Xlib Xt X11R6X 가
 - ▶ Motif Motif 가
- : CDE GNOME/KDE
- /LWP(LightWeightProcess)
- : /proc



Step 4 : Performance

- Performance
- Performance Performance Inspector OProfile
 - ▶ Performance Inspector
 - Performance analysis tool set
 - Performance Performance Performance
 - ▶ OProfile
 - RHEL4 SLES9
 - , Translation Look-aside Buffer , ,



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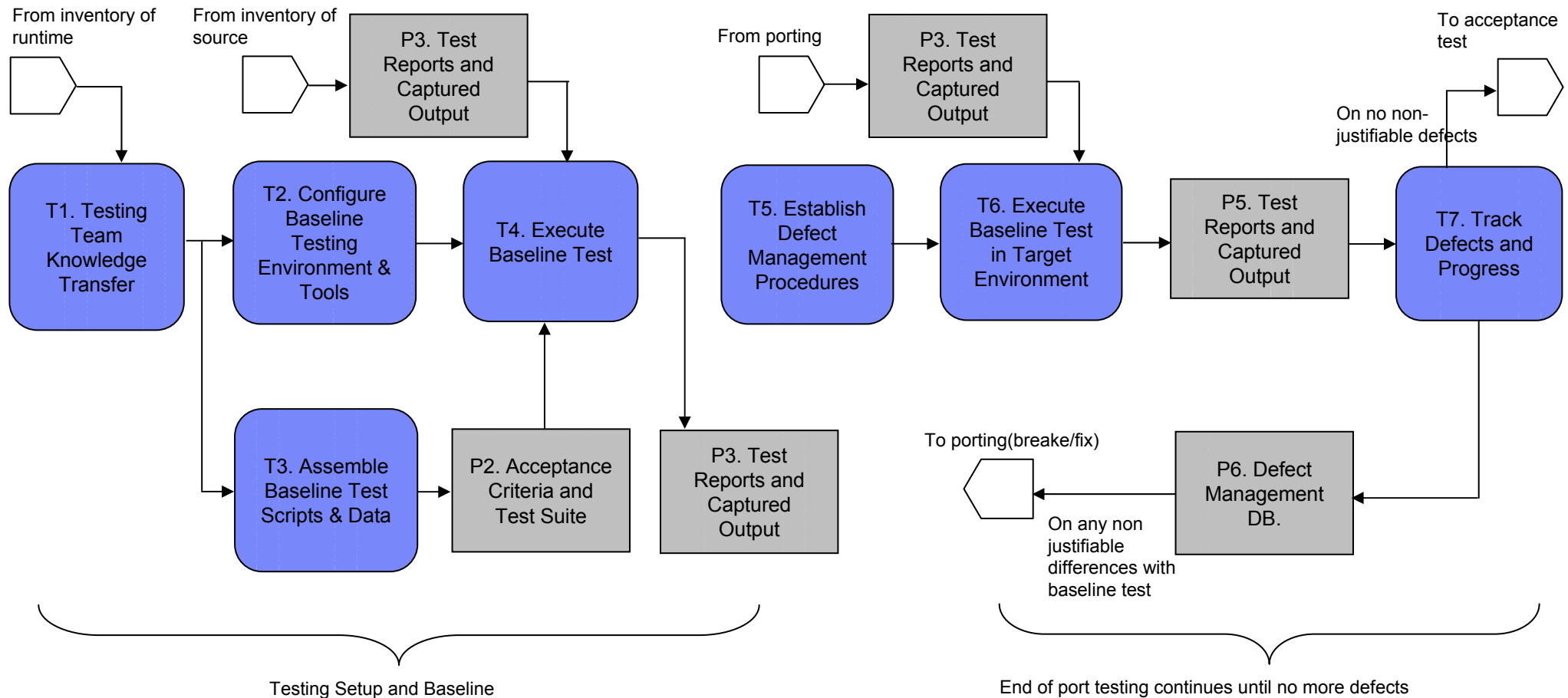
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FLOW



T1. Knowledge Transfer

- Application knowledge is required
- Prepare portfolio scope review

T2. Configure Baseline Testing Environment and Tools

- Provide the environment for baseline testing
- All baseline testing will be done on customer premises, on customer provided hardware, software and network facilities
- Verify that the environment is ready to support baseline test efforts

T3. Assemble Baseline Test Scripts and Data

- Definition of acceptance test criteria by the customer's application staff/users
- Testing methodology requires the comparison of results from the baseline test, using pre-ported code
- Test cases and test scripts for both on-line and batch functions must be developed/assembled and documented



T4. Execute Baseline Tests

- Perform to ensure that the pre-ported code is executable and the load libraries produce deliverables
- Test results provide the basis for future comparisons to the test results
- The output from this task should be the recorded and verified results of running the test

T5. Establish Defect Management Procedures

- On larger projects, sets up the automated test management and defect tracking and resolution tools for use during post-port testing
- On smaller projects, standard procedures and a simple spreadsheet can be used

T6. Execute Baseline Test in Target Environment

- In the same order as the baseline environment test, loading the same data and executing the same scripts
- The output from this activity should be the test results

T7. Track, Manage Defects and Progress

- Compare the results with the baseline results
- Execute test scripts until all non-justifiable differences are eliminated



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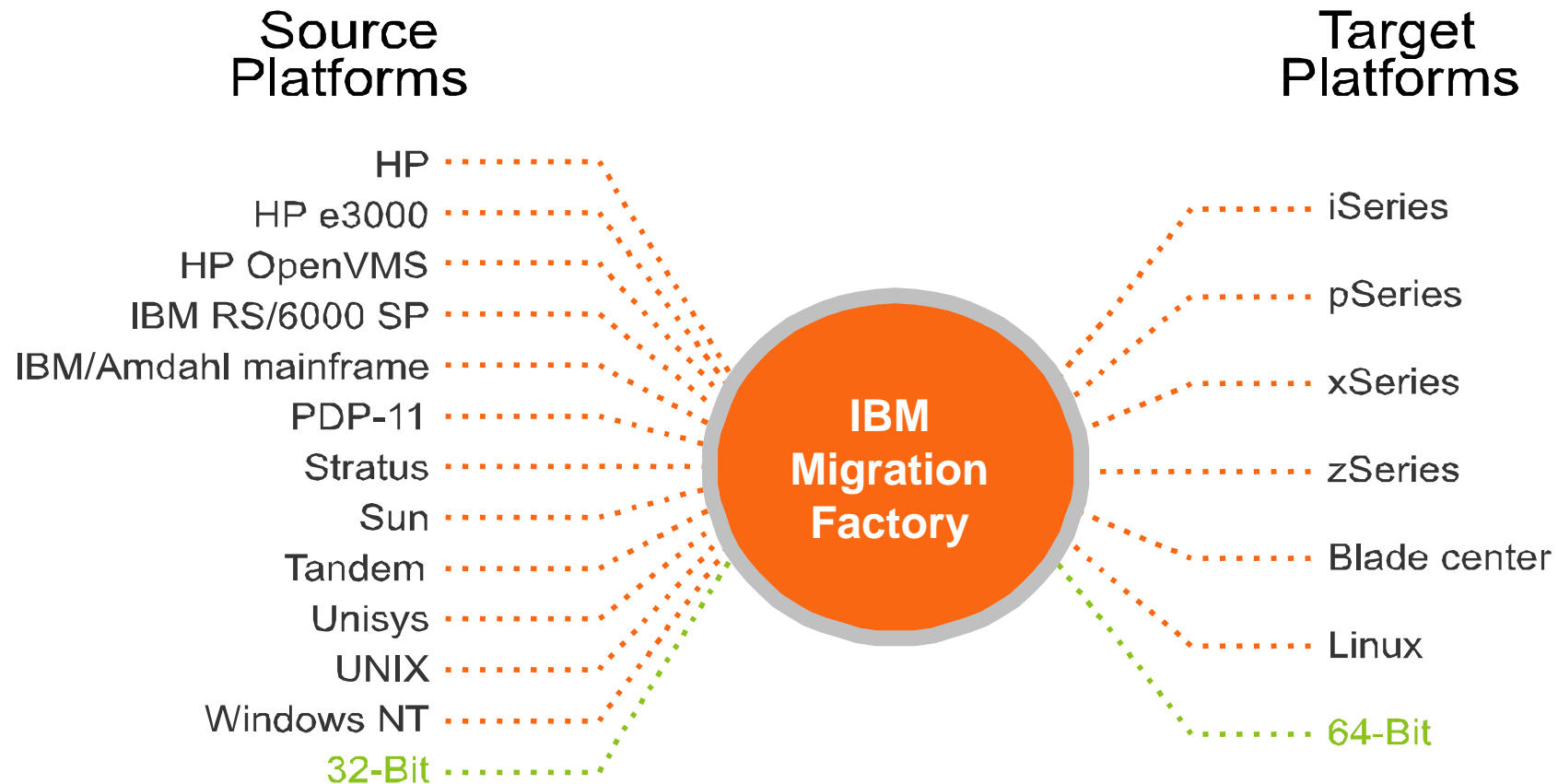
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IBM Migration Factory

Extensive Re-platforming Capabilities



IBM Migration Factory Services for Solaris to Linux on IBM

- IBM Migration Factory Linux Assessments for Qualifying Customers

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- IBM Migration Factory for Linux

- ▶ Solaris C/ C++ to IBM Linux Porting

- ▶ Oracle Database Migration Services

- ▶ Custom code applications, Databases, SAP/PeopleSoft/Oracle E-Business Suite



Thank you...

