

The Avalanche Desktop Reference Management Platform

P1322

Establishing and Maintaining the Linux
OS PowerPC Desktop

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Avalanche!

Introduction

Basic Q&A

Technical Deployment

Discussion



What is the DRMP Project?

The Desktop Reference Management Platform Project is a collaborative effort where Avalanche members will define a roadmap & process for the investigation of open source software stacks and the necessary processes to effectively manage this new environment.

What is AVALANCHE?

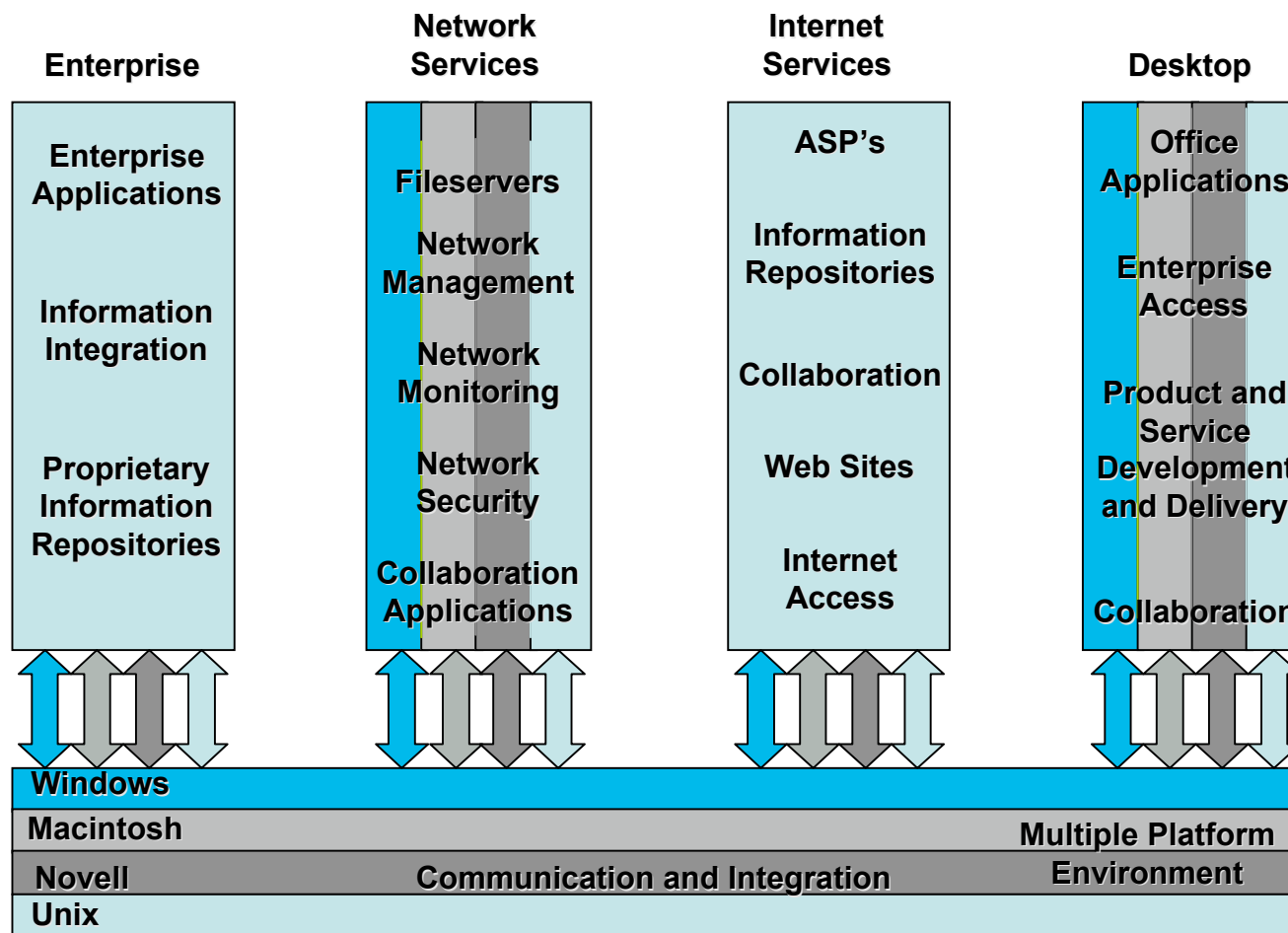
The Avalanche Corporate Technology Cooperative is a private exchange that enables it's members to contribute, collaborate and legally distribute intellectual property to other members.

The Objective:

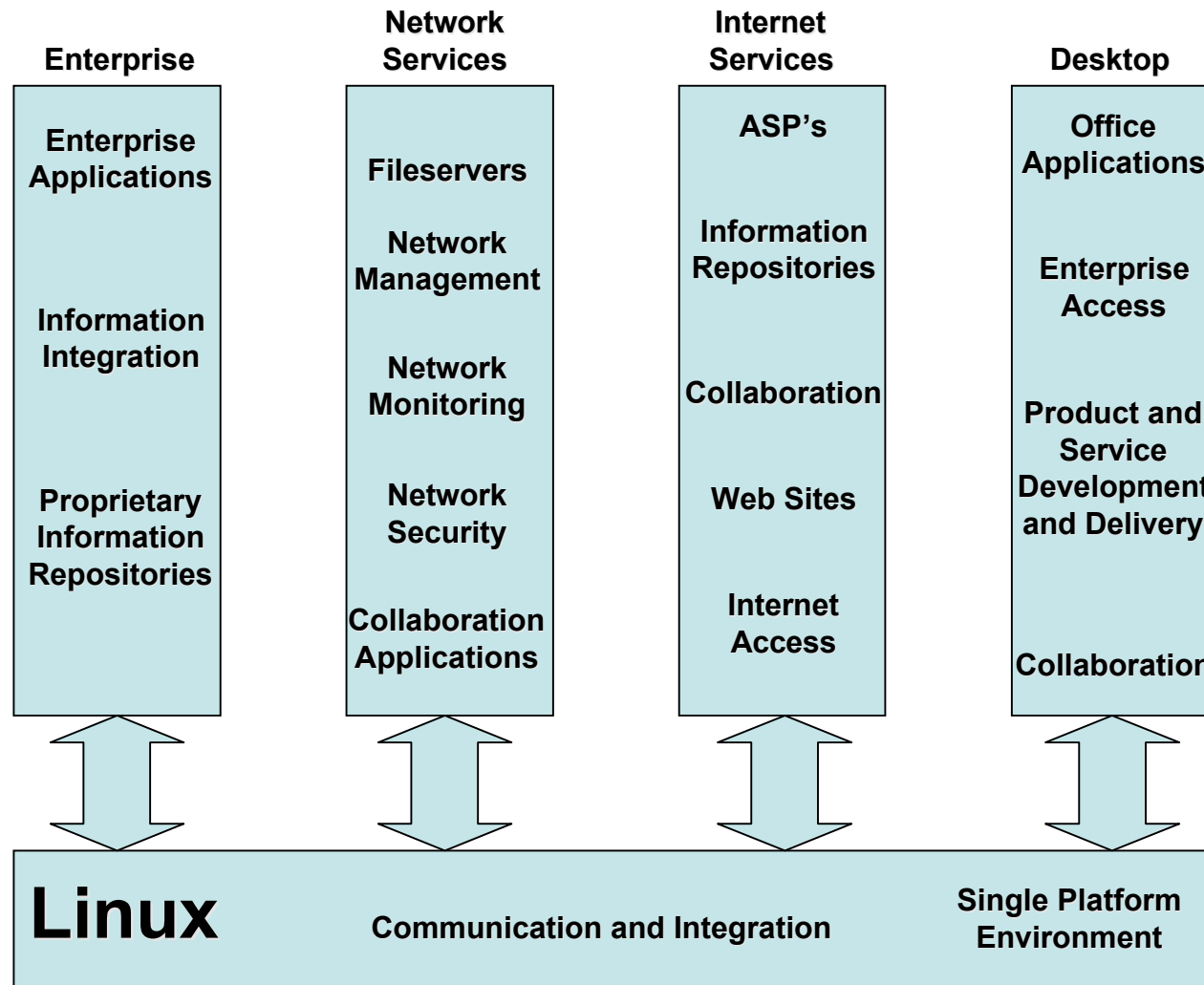
Members collaborate to develop new applications, share in development and maintenance of existing applications, with a focus to significantly reduce the total cost of ownership of business software.



An EXAMPLE of a Multiple Platform Environment



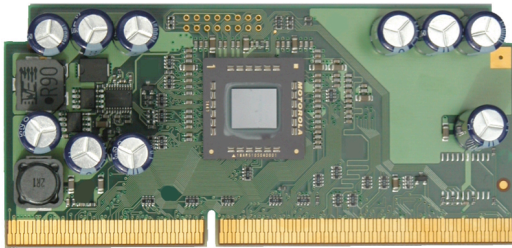
Four Systems in the Single Platform Environment



**PowerPC
And
OSS for
a TOTAL
SOLUTION**



The Pegasos II



**G4 CPU
card**



MicroATX mainboard (236 mm x 172 mm) with **Open Firmware** and compatible with all ATX-compliant cases

MV64361 Discovery II System Controller from Marvell.

G3 or G4 PowerPC CPU from IBM and Motorola.

PC2100 RAM, 2xDDR-266 with up to 8 gigabytes total.

AGP slot

PCI subsystem with three 32bit, 33MHz slots, optional Riser Card.

IEEE1394/Firewire™ 100, 200 or 400 MB of data bandwidth.

Gigabit Ethernet provided by the Marvell Discovery II MV64361
10/100 megabit Ethernet using a VIA Rhine controller.

USB subsystem giving two external connectors and one internal connector, provided by the VIA 8231 chipset.

S/PDIF digital audio connector.

AC97 sound subsystem with microphone input, line in/out and headset connector, provided by the Sigmatel STAC 9766 codec.

IRDA for infra-red remote control.

ATA100-compatible IDE support with two channels for up to four ATA devices, provided by the VIA 8231 chipset.

Two PS/2 connectors for standard PS/2 mice and keyboards.

Serial (RS232) port.

Parallel (Centronics) port.

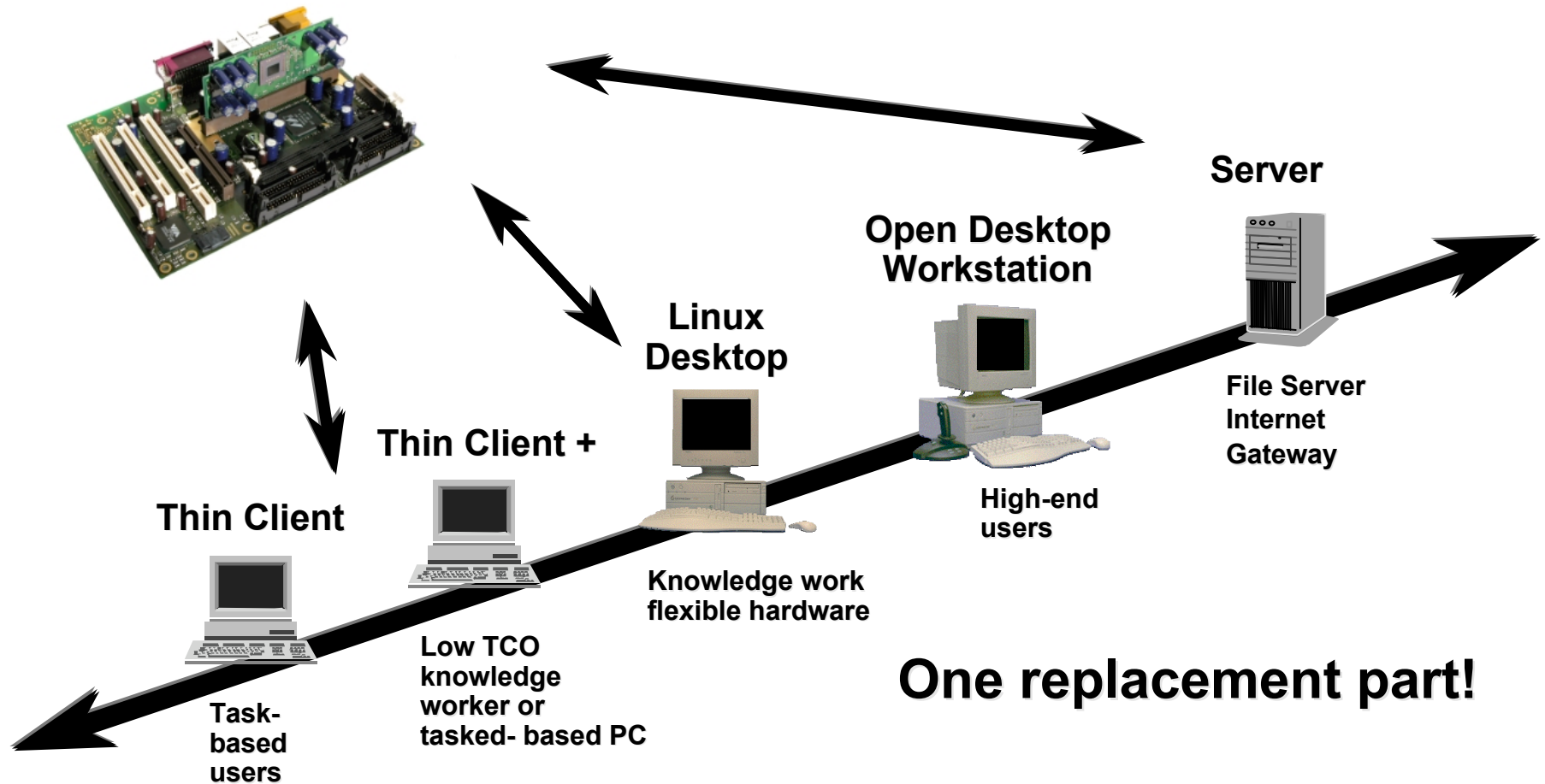
Gameport for PC-compatible joysticks.

Floppy drive connector



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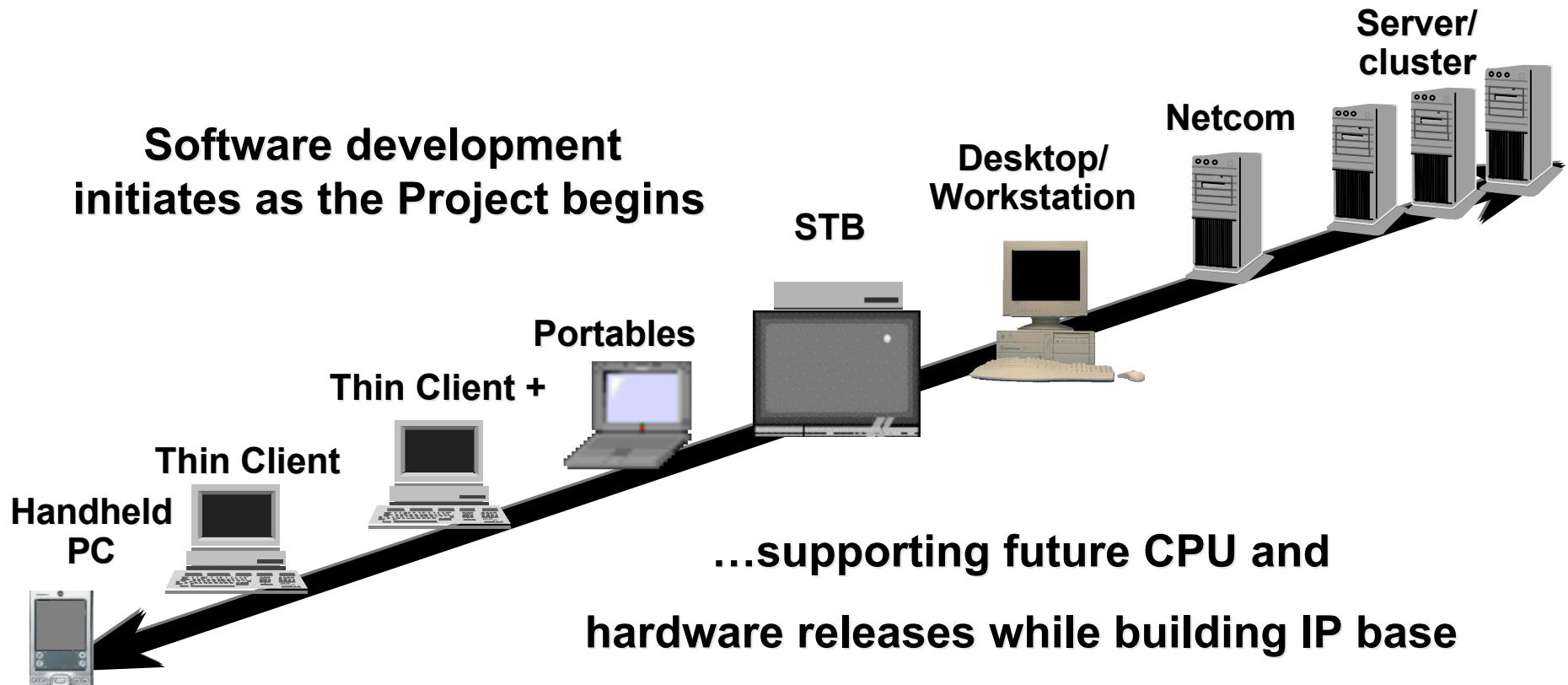
Foundation: Common Hardware



The PegasosPPC is a building block for
multiple system implementations/applications



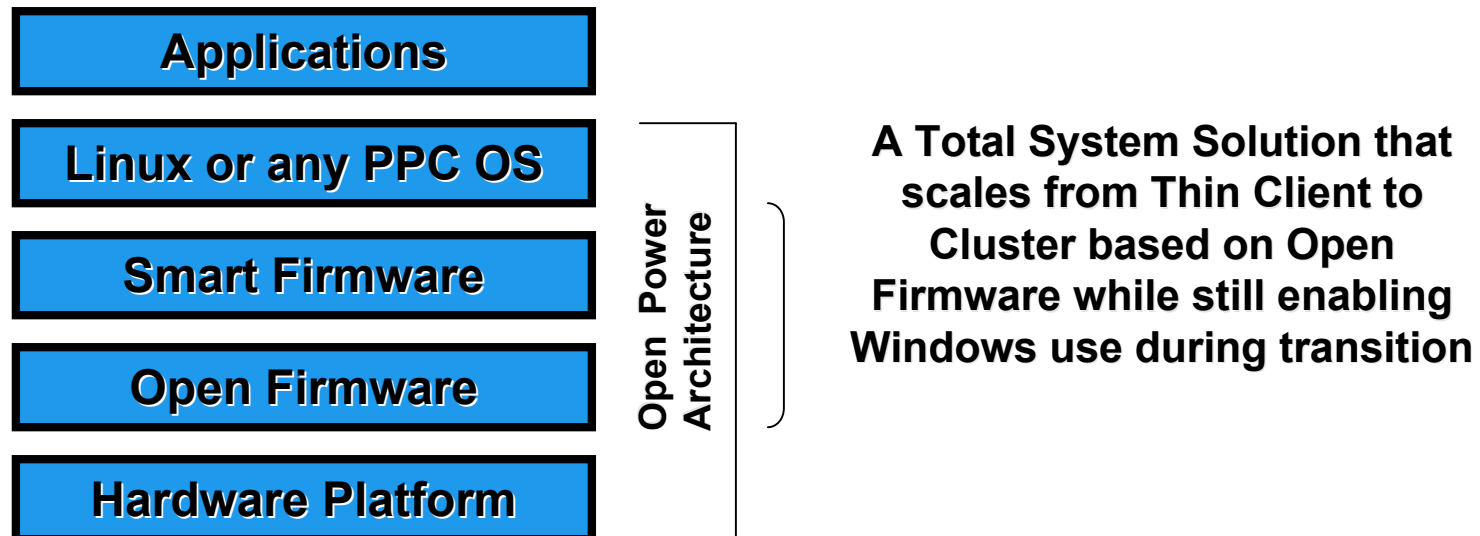
PowerPC Everywhere!



Future versions of PegasosPPC will closely mirror next generation CPU releases



Open Power Architecture

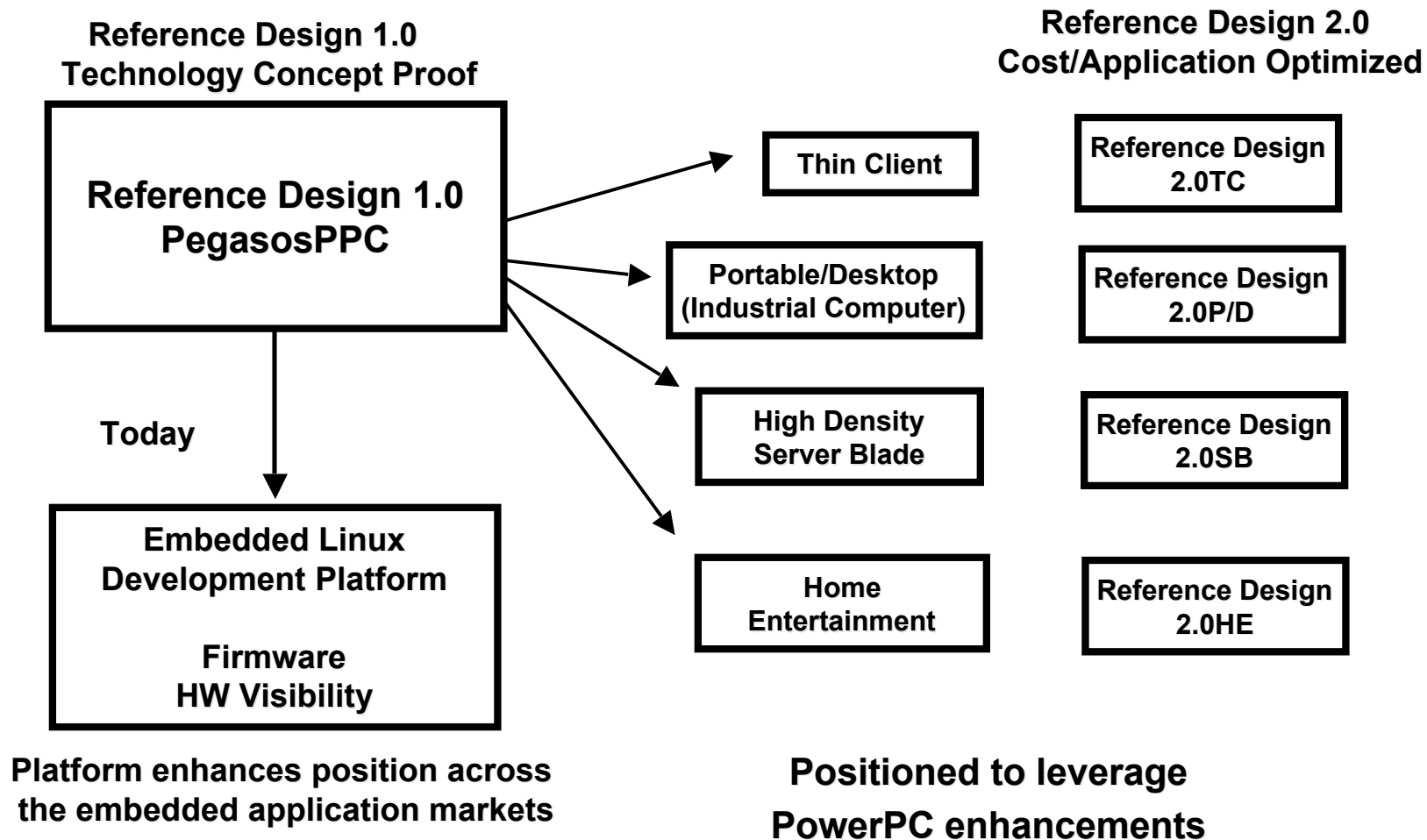


PowerPC advantages:

Lower power → lower temperature → higher reliability
+ builds cost saving proprietary IP based on
Open Source Software (OSS).



Underlying Strategy



Step #1: Define Success in Terms of Ability

The approach is to focus on defined function users that need access to a limited set of applications and basic desktop productivity needs. The initial areas that Avalanche Members are focusing on are:

- **Call centers**
- **Customer support areas**
- **Plant or remote locations**
- **General office environment desktops**



Project Goals

- **Develop a process and knowledge base within Avalanche that will reduce the risks of implementing open source components for the desktop.**
- **Save members money through the effective use of Open Source Components for the desktop.**
- **Establish a low risk process that will provide options for the desktop environment.**
- **Establish a better negotiating position for the Member with current commercial software vendors on the next contract negotiation cycle.**



Reduce the Total Cost of Ownership

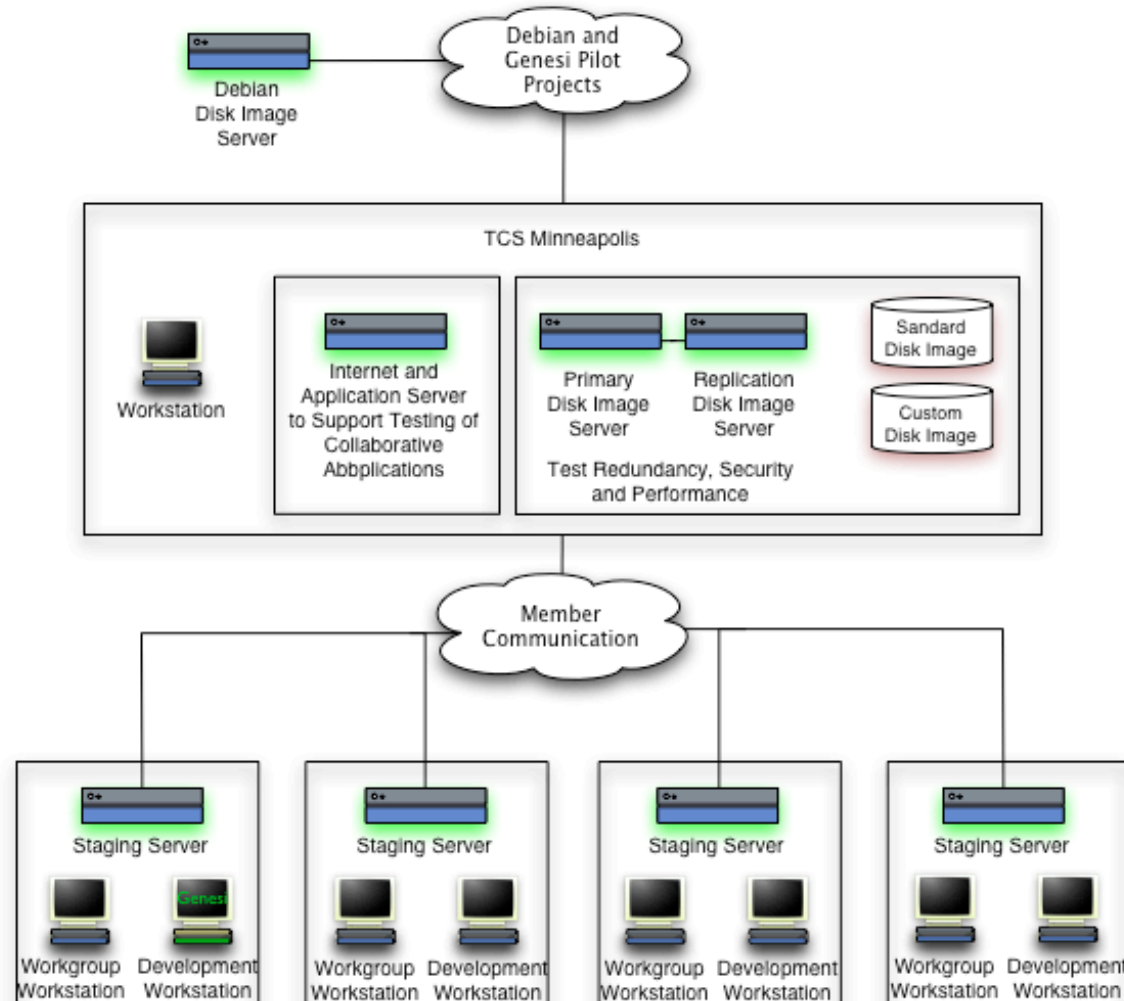
Validate long term market position

- **One hardware platform -- PowerPC based**
- **Open Source OS and Applications/multi-OS support**
- **Licensed Windows and MacOS supported during transition**
- **AltiVec makes things better**
- **Easy to upgrade**
- **No moving parts**
- **Scalable**
- **Energy efficient**

One Total System Solution



Pilot Project PegasosPPC Deployment



Common Hardware and ONE System Environment

Everything is Linux ready today

Leverages the emergence of Linux as a strong driving force in IT

Single Platform Reduces Complexity

Leverages competence in performance/power

Single Platform Eliminates Redundancy

Facilitates a wide reaching community of PowerPC developers, semiconductor suppliers, OEM, software and system integrators

Single Platform has a Single Team with Shared Goals

From low-end to high-end inter-operability and a common CPU



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The Avalanche Project

Technical Deployment



- **Deployment Scenarios**
- **Installation Management**
- **Current Reference Installation**
- **Discussion**



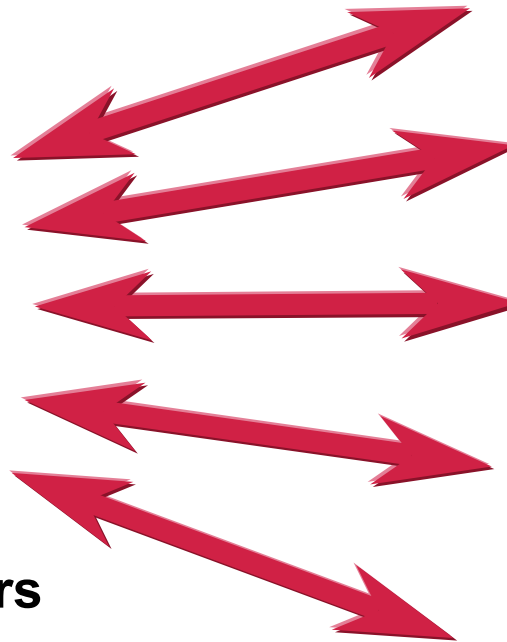
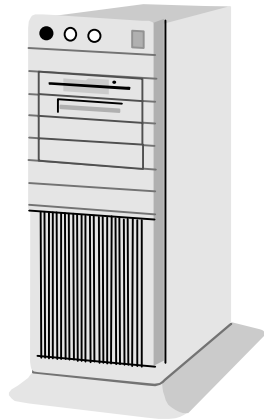
Different Avalanche Cases

Different deployment scenarios

- **Standalone workstation**
- **Standalone small server**
- **Server cluster**
- **Thin clients + disk server**



Thin client setup



- One or more disk servers
- Several thin clients
- Connected through a network



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Installation Management

Based on Debian



Why Debian ?

- **Well supported Linux distribution on Pegasos**
- **Open development model**
- **Easy to integrate changes back**
- **Leading package management system**
- **Others choose Debian too : HP offers Debian based system, Debian has the most derivative distributions (Lindows, Xandros, SkoleLinux, Ubuntu, ...)**



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Installation Management

Important used programs

- **Gnome**
- **OpenOffice**
- **Mozilla Firefox**
- **Evolution and Ximian Connector**
- **Gnome remote desktop**
- **Others as needed ...**

Definitions

Installation

- **actual installed system**

Snapshot

- **set of packages and their configuration that are used to create an installation**

Image

- **a disk image of an installation**



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Snapshots

Snapshots contain all the information needed to recreate an installation from scratch.

- **List of installed packages**
- **Configuration information for each package**
- **Archive of the installed packages as both:**
 - ✓ **binary packages**
 - ✓ **source packages**

Steps of the Avalanche Technology

- **Create and configure an installation.**
- **Take a snapshot of the installation.**
- **Store the snapshot in an installation database.**
- **Make initial installation using the cloner.**
- **Modification of an existing snapshot.**
- **Testing the upgrade between two installations.**
- **Upgrading installations to new snapshots.**

Tools and processes

- **snapshoter:**
 - ✓ used to take a snapshot from an installation.
- **cloner:**
 - ✓ recreate an installation from a snapshot.
- **upgrader:**
 - ✓ upgrades an existing installation to a new snapshot.

Member feedback circle

- **Initial installation**
 - ✓ Member uses and evaluates
 - ✓ Member provide feedback with new needs or modifications of existing ones
- **Installation modification step**
 - ✓ The needs of the member are evaluated
 - ✓ The installation is upgraded
 - ✓ A new snapshot of the installation is taken
 - ✓ Upgrade from the old snapshot is tested
- **The new snapshot is pushed to the members**
 - ✓ The snapshot data is send to the members local server
 - ✓ The members installations are upgraded





Riding the Open Source Software Wave!



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Up for the Challenge!



Partnership for Change!

Building a PowerPC Pervasive Computing Environment

