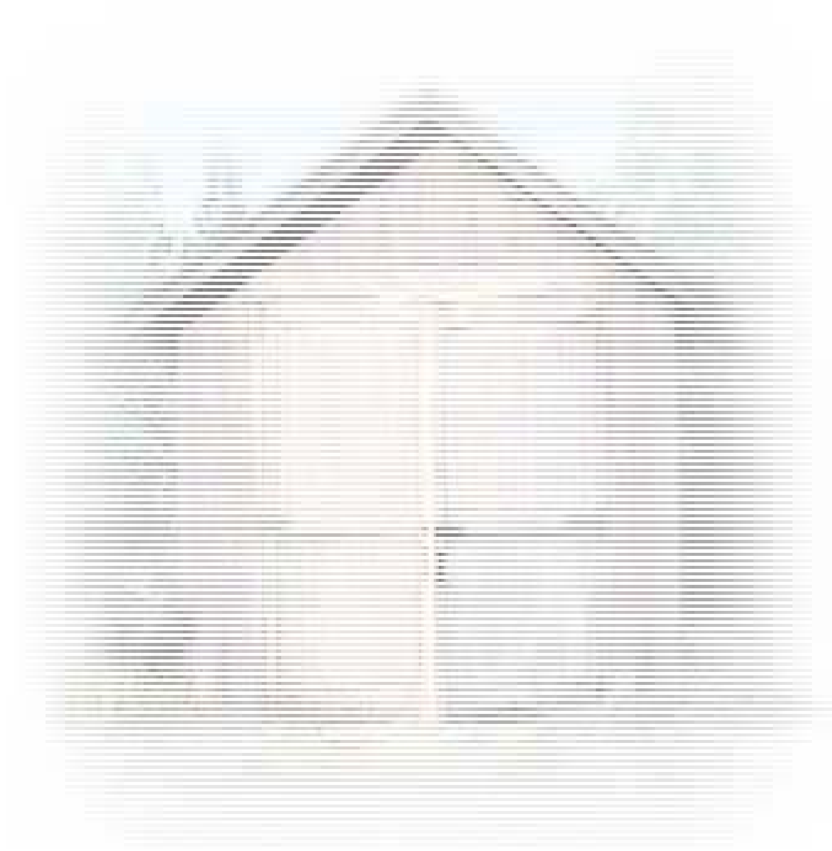

Reducing your risk when Adding New Enhancements

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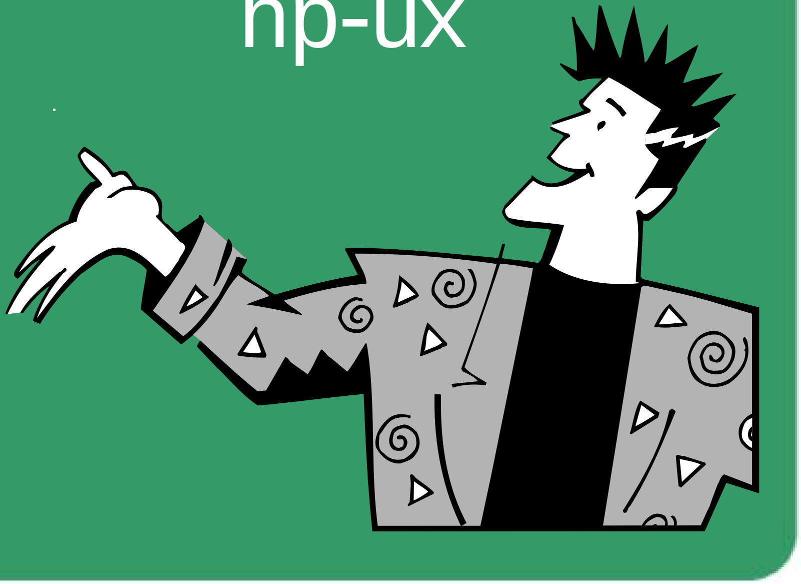
HP WORLD 2002
Conference & Expo

agenda

- delivery of enhancements to hp-ux
- the software pack
- individual patches
- risk management strategies
  - general guidelines
  - patch levels

delivery of enhancements to hp-ux



core software

- enterprise releases
- technology releases
- the software pack
- individual patches

application products

- product releases
- patches

both

- hardware enablement bundle

the software pack

a process to allow new core HP-UX features to be released between HP-UX Enterprise releases, without causing undue risk for customers who are using the current enterprise release

the software pack

Goals/Requirements:

- Simple installation of new core HP-UX feature bundle from the SPK (Software Pack) CD or Web.

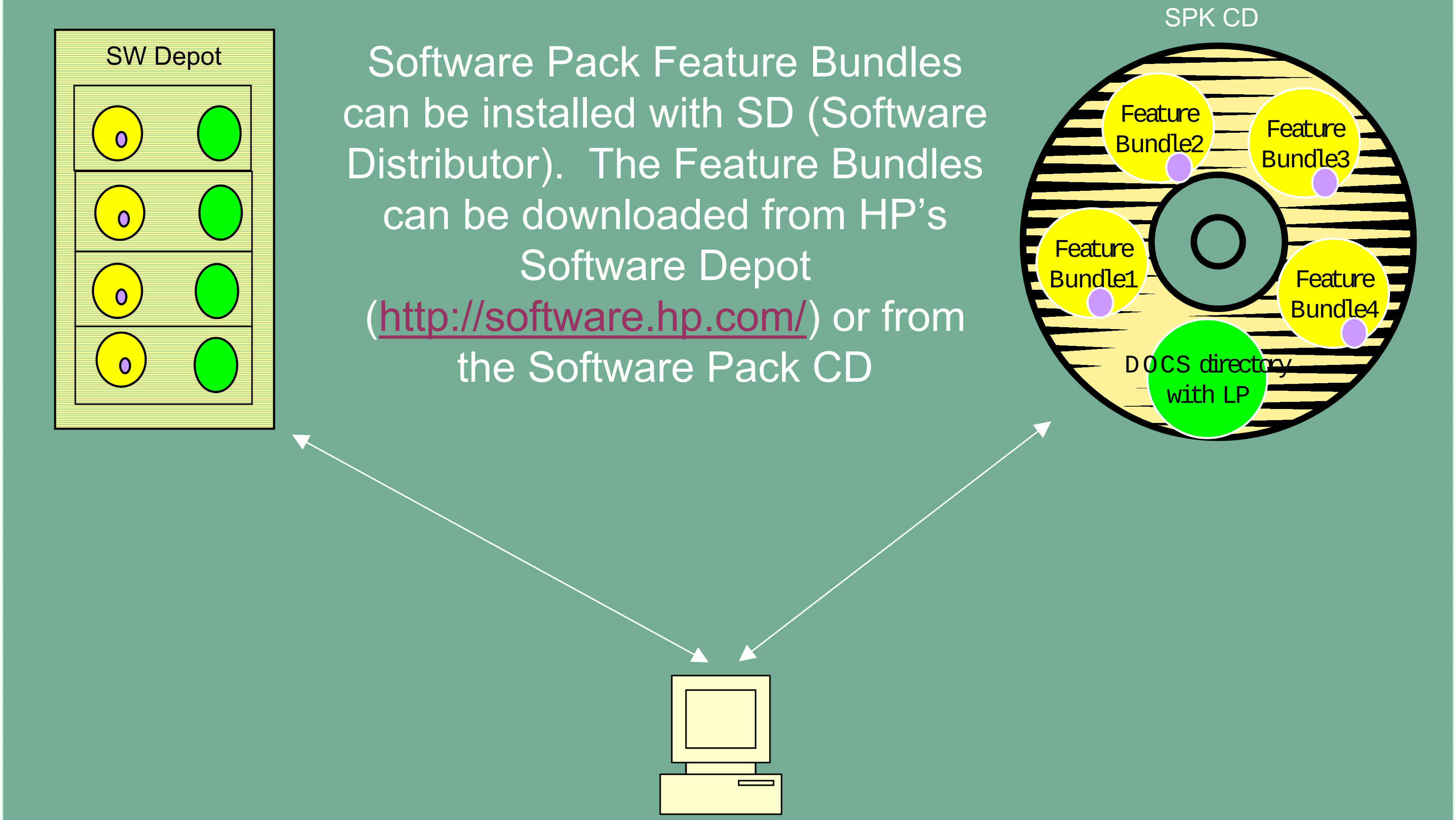
- Feature bundle is packaged like an application product.

- HP-UX ***Product Updates*** must only be ***small***, ***low-risk*** enabling hooks

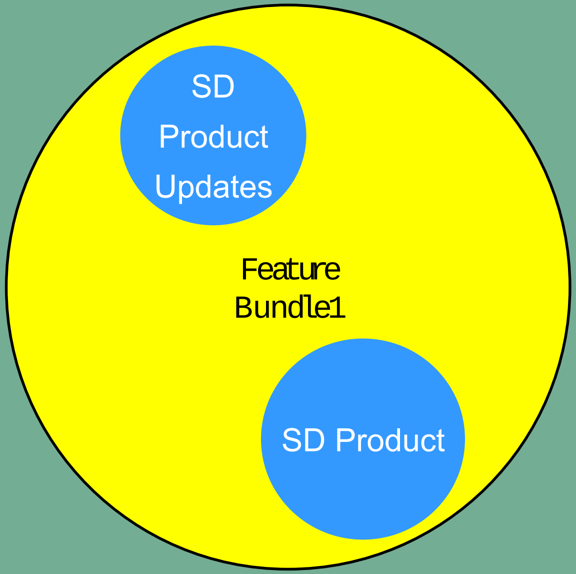
- Delivery method: Semi-annual CD & web release (aligned with major OE updates in December and June). Opportunistic TTM web delivery on other quarters.

Simple Installation

Software Pack Feature Bundles can be installed with SD (Software Distributor). The Feature Bundles can be downloaded from HP’s Software Depot (http://software.hp.com/) or from the Software Pack CD

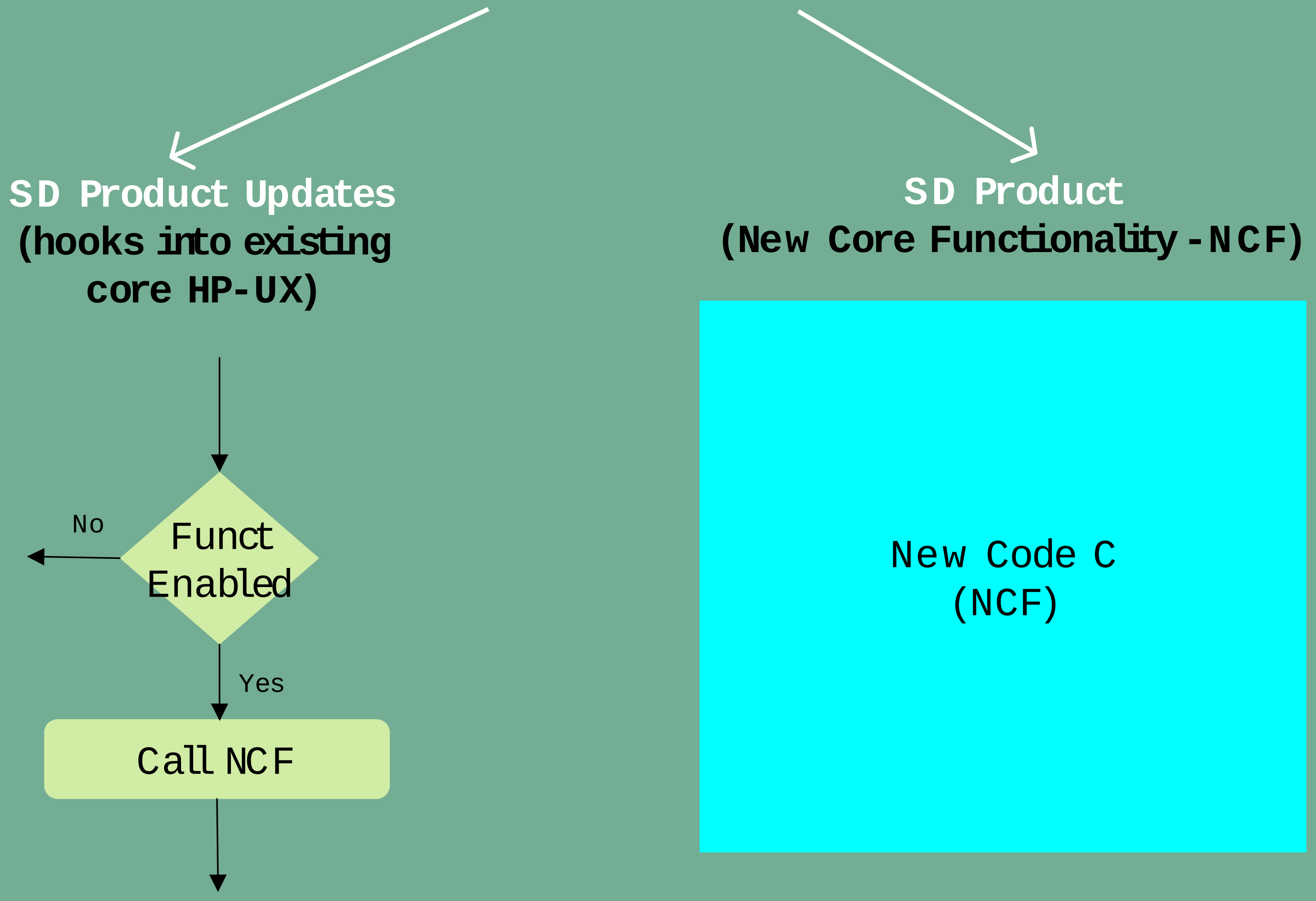


Feature Bundle Packaged with Product and Product Updates



SPK Bundle Breakdown

two components



SD Product Updates
(hooks into existing
core HP-UX)

Funct
Enabled

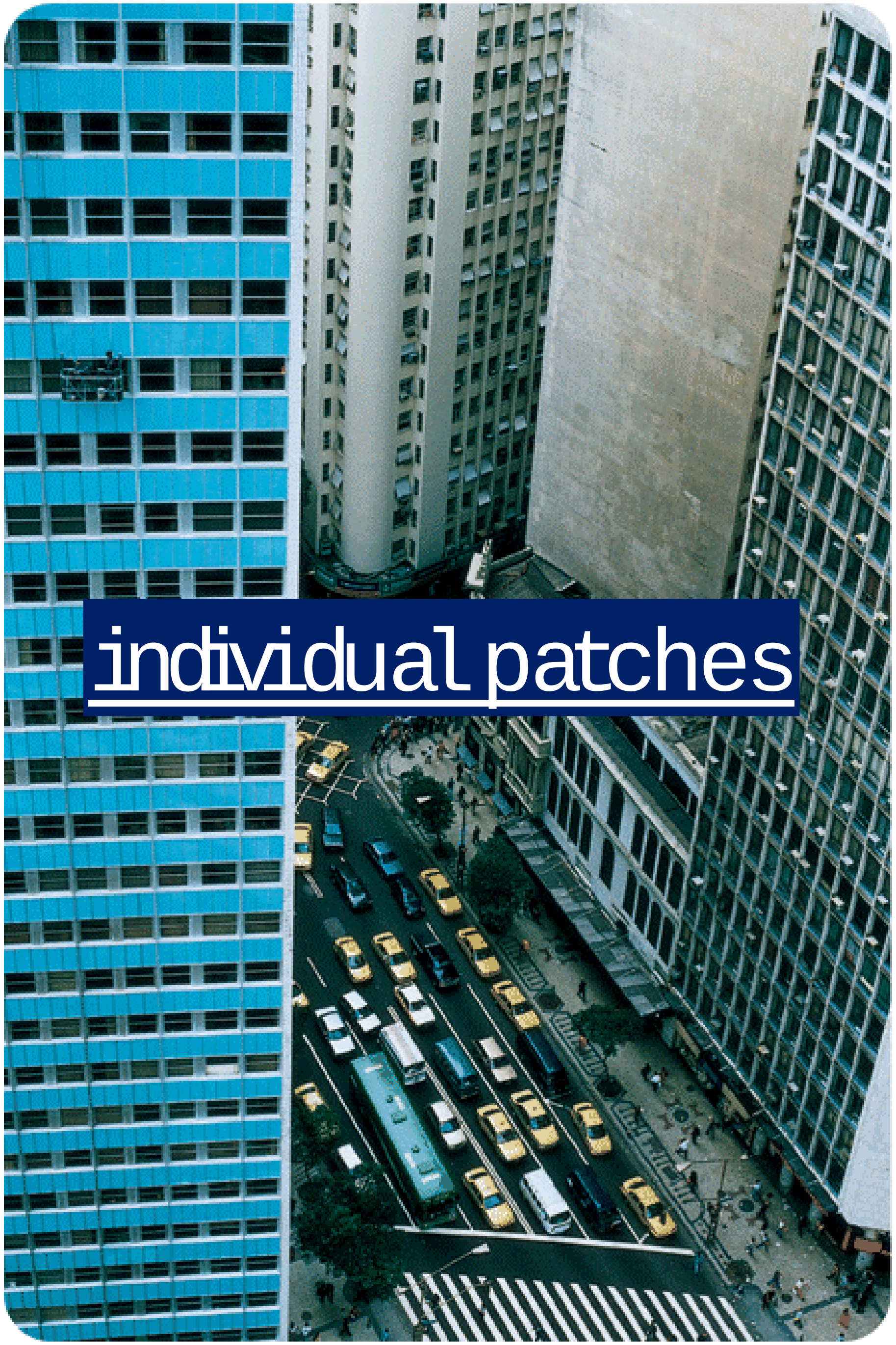
No

Yes

Call NCF

SD Product
(New Core Functionality-NCF)

New Code C
(NCF)



individual patches

patch anatomy

- category tags
  - at least one of the following two category tags or None must be specified. More than one category tag may be specified, if applicable. The values specified in any superseded patches must also be specified, that is, these values must be **cumulative.**
    - defect_repair | hardware_enablement | None
  - definition of common category tags
    - defect_repair: provide defect repairs
    - hardware_enablement: provide new hardware support
    - enhancement: provide enhancement
    - general_release: general release patch
    - critical: fix a defect that meets hp’s critical definition

individual patches

patch anatomy

- symptom text
  - The external symptoms of problem, specifically what a customer would experience. Includes any and all (exact) error messages, panics, etc. Includes any configuration information that relates to the problem. Includes all superseded patch information.
  - PHKL_21675: (SR: 8606112739 CR: JAGab88679) Async driver I/O completion notifications don't work when used in conjunction with select(2) system call.
  - PHKL_10164: If a user process changes its process group after opening the async driver, all subsequent requests will be refused with an EBUSY error.

individual patches

patch anatomy

- defect text
  - A detailed description of the defect that specifically addresses the explicit conditions that caused the problem (if known), and how to reproduce the problem (if known). Also includes methods to verify that the patch needs to be installed. Includes all superseded patch information.
  - PHKL_21675: (SR: 8606112739 CR: JAGab88679) Async driver's IO completion flag notification was checked in wrong sequence, when used in conjunction with select. Resolution: Changed sequence to check for IO notification flag before checking other types of IO completions.
  - PHKL_10164: The code that used to check for being called by the opening process was changed to check the process group, instead. It now checks both.

individual patches

patch anatomy

- enhancement text rules
  - The Enhancement status of this patch and all superseded patches. A patch must indicate if it or any superseded patch delivers a new enhancement.
  - A patch is to be marked as a new enhancement when: 1. The patch delivers new functionality. 2. It exists primarily to enable new functionality being delivered in another patch or product. 3. It alters existing functionality in a user-visible manner.
  - Format: Yes | No | No (superseded patches contained enhancements) *patch_name:* enhancement_text *[superseded_patch_name:* enhancement_text]

individual patches

patch anatomy

- enhancement text rules

- Where:
  - *Yes* = this patch delivers a new enhancement.
  - *No* = this patch does NOT delivers a new enhancement, AND *none* of the patches which are superseded by this patch delivered any enhancements.
  - *No (superseded patches contained enhancements)* = this patch does NOT delivers a new enhancement, but one or more of the patches which are superseded by this patch DID deliver a new enhancement.
  - *patch_name* =patch name of this patch or a superseded patch which first delivered an enhancement.
  - *[enhancement_text]* =The purpose of this text is to identify/label the enhancement and not to fully define it. This field does not replace the Symptoms, Defect Description, Patch Dependencies, Other Dependencies, Hardware Dependencies, or Special Installation Instructions fields. All patches that are associated with an enhancement should use similar text in their Enhancement fields.

individual patches

patch anatomy

- enhancement text example

A enhancement patch, PHKL_26519, which supersedes non-enhancement PHKL_12000 and enhancement patch PHKL_26047.

Yes

PHKL_26519: This product update enables the support for 16 byte CDBs (Command Descriptor Block) in the SCSI driver.

PHKL_26047: This change provides pre-enablement of extensions to mmap to allow mapping of I/O registers or address ranges. This change will have no impact on your system until the extensions to mmap are fully enabled.

individual patches

differentiating enhancements

how do you tell a defect fix from an enhancement?

- enforcement enhancement category tag
- enhancement patch differentiation – history text
- user visible behavior – default to off
- enhancement policies

individual patches

user visible behavior

A patch cannot introduce specific user visible changes to current users of the product unless a) the change fixes a defect, or b) the user must take explicit action to make use of new functionality

All patches containing software enhancements, regardless of risk level, should deliver their User Visible Changes in a disabled mode. Explicit user action should be required to enable the enhancement. New options or parameters delivered in a patch are by default disabled (e.g. a command that delivers a new option).

individual patches

enhancement policies

A patch that introduces an enhancement should not introduce defect fixes other than those related to the enhancement.

Patches cannot be used for the following.

- Adding software features in core hp-ux. The preferred method for adding software features on enterprise releases for 11.11 and before is an enabling patch plus new core functionality.
- Performance enhancements that cross subsystem boundaries. Refer to the process for approving enhancement patches for hp-ux.
- No patches that tie two subsystems together or add more than 5 additional files to the patch unless the Process for Assessing the Customer Impact of a Patch has been followed.

Patches cannot break forward or backward compatibility with the product version to which they are being applied

risk management strategies

General guidelines

- realize because patches are cumulative – you can not completely avoid selecting patches containing enhancements
- use category tags and enhancement text history to identify enhancements
- user visible behavior should default to off – but it's always safer to test that
- hardware enablement patches generally have much lower risk than software enhancement patches – the scope of change is much less
  - but remember – all patches are cumulative!

risk management strategies

General guidelines

reactive patching

- avoid new enhancements, unless there is no other alternative
- select level 3 patches whenever possible, but level 1 patches may be necessary

proactive patching

- select your major new core functionality from the Software Pack
- depending upon your risk adversity - scruitinze minor, mixed enhancement patches
- select level 3 patches when possible, occasionally level 2's
  - the QPK (Quality Pack) and ITRC allow you to easily do this
- hardware enablement patches are not considered high risk

risk management strategies

Patch levels

timeliness vs. risk

you want fixes to your problem immediately

but

you want assurance that a patch won't crash your mission critical system

unfortunately

it takes time to create that assurance!

risk management strategies

patch levels

- to assure a timely response to you, hp releases patches when they meet established hp quality standards
- to assure greater stability and lower risk, patches undergo additional post release testing in hp in complex environments and application stacks
- patches are assigned a progressive rating level -- 1, 2, or 3

risk management strategies

patch levels

Where do you find "safe" level 3 patches?

- the quality pack bundle (QPK)
- the ITRC patch tools

Software Pack bundles do not necessarily include level 3 patches – but remember they are really product updates!

hp-ux patch levels

Rating	*Meaning*
★	1. Patch meets established HP quality standards 2. Patch fixes problem it purports to fix 3. No side-effects 4. Installs and de-installs in target environment
★★	1. Patch sent to threshold number of customers 2. Patch is threshold number of days old 3. No problems reported
★★★	1. Tested under complex configurations 2. Tested with complex application stacks 3. Stress & Performance tested

risk management strategies

patch levels

what if the patch your want is not "HP recommended"?

- level 3 patches are annotated on the ITRC as "HP Recommended". When no level 3 patch exists, it's a level 2 that is "HP Recommeded".
- sometimes the ***Best*** patch to fix a reactive problem might be a Level 1 patch – newly released!!
- you make the risk benefit decision
  - Is the problem critical to you or can you tolerate some risk?
  - Go with the Level 1 patch
- otherwise:
  - Defer fixing problem until reliability of patch is more fully established