



Session BOF-2597

Designing Systems practitioner productivity improvements

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Rational Design Factory – Systems and Software Engineering

Innovate2013

The IBM Technical Summit





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Agenda

- Systems and Software Engineering solution design
- Key scenario for practitioner productivity
- Design improvements
- Discussion: Areas of practitioner productivity improvements



Design Factory **Mission Statement**

- To inspire and lead our teams in delivering solutions that are **useful, usable and desirable**
 - To design best-of-breed, innovative and seamlessly integrated solutions for software development teams via customer-centric, outside-in solution design methods
- To excel in scenario design, user research, user interface design, functional design and technical design

A **Scenario** establishes a **Usage Model**

A solution scenario establishes a recommended “**usage model**” for a solution

- It is set in a specific **context** that includes the domain, a team, the size/complexity of a reference project, and the process/practices used
- It involves a team of people, represented by **persona**, who seek to achieve a goal. (usually deliver a release)
- It **identifies their activity** in how they get started, plan their project, execute on what they planned, deliver & assess what they did. (End-to-end)
- We use “**acts**” and “**scenes**”. An act covers the team goal in a particular phase of the release. A scene is a single user task that contributes to the goal.
- We communicate them in the form of a graphic or **activity diagrams**
- We detail the scenes in the form of **user stories** linked to our solution and product **development plans**

SSE Design Scenario Personas



Pete (Project Manager)

Manages assignment of work items to the team and tracking of project progress.



Tammy (Test Manager)

Tammy leads the test and validation effort. She defines the test plans and tracks the progress of the quality plan and stability of the product.



Pam (Product Line Manager)

Identifies new product opportunity, defines target segment, creates and manages product variants.



Tony (Systems Tester)

Performs automated and manual testing to validate hardware and system requirements.



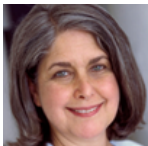
Charles (Chief Engineer)

Concentrate at high-level system and architecture issues and ensures architecture integrity in the system and makes all architectural design decisions.



Sal (Safety Engineer)

Analyzes potential failures within the system and determines actions that can mitigate the risk of failure to meet the safety certification requirements.



Susan (Systems Engineer)

Performs requirements analysis, modeling and simulation to manage complexity. She collaborates with lead engineers from various hardware and software disciplines to design the system to meet stakeholders' needs.



Allison (Tools Administrator)

Installs, Configures and Maintains tools in production. Maintains project templates and create tool repositories using templates.



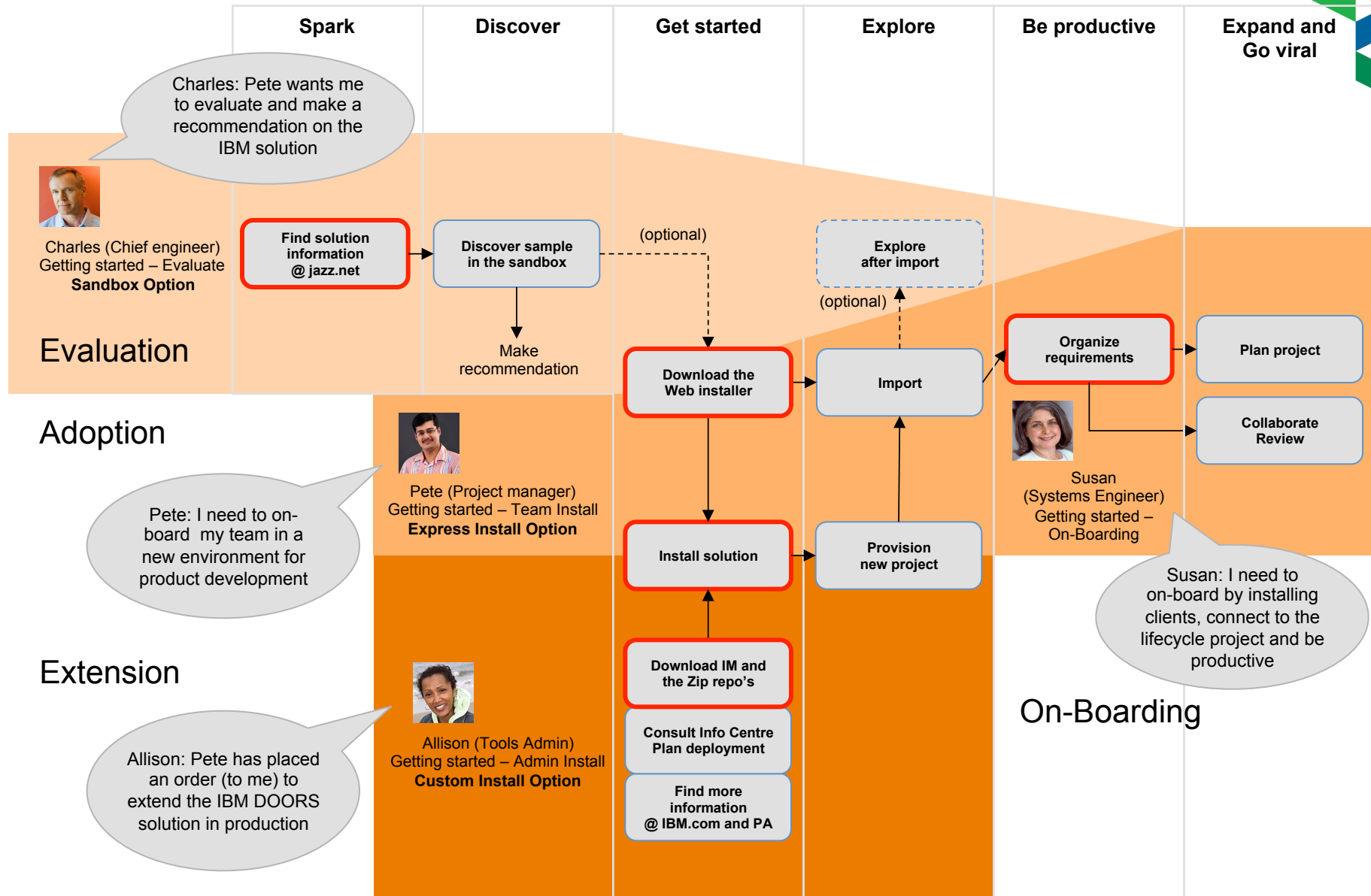
Dan (Developer)

Creates the software design model and implements the System Engineering model. Designs, implements and unit tests the software model using MDD.

Scenario Personas on Jazz.net

https://jazz.net/rm/resources/_wF_QBd4EeKAK8OVgd5Q4Q

Scenario for practitioner productivity design



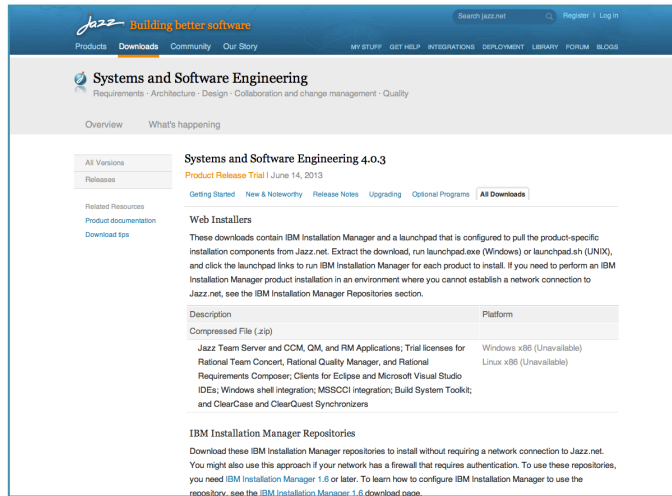


Design for improved practitioner productivity

Examples of design improvements

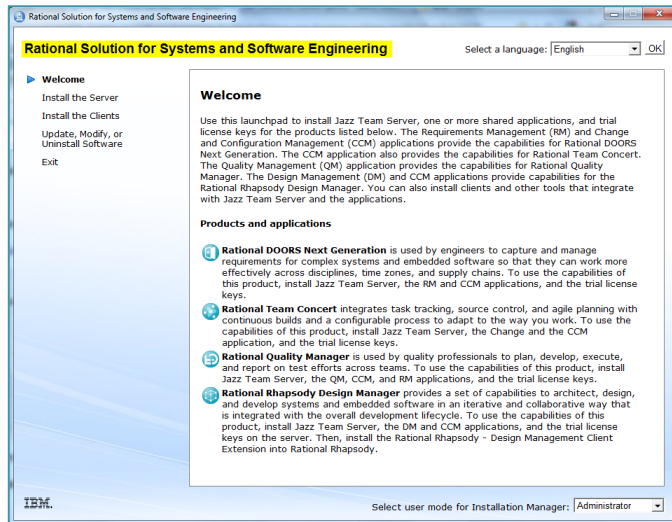
- **Install** – Improvements for tool admins and project leads
 - Practitioner concern: Multiple locations for solution evaluation and deployment installers
 - Productivity improvement: Express installer for Systems and software engineering solution delivered on jazz.net
- **On-boarding** – Improvements for system engineers (and other practitioners)
 - Practitioner concern: Welcome experience for non CLM users
 - Productivity Improvement: New welcome page with getting started activities for system engineers
- **Organizing requirements** - Improvements for system engineers
 - Practitioner concern: Organizing requirements in modules
 - Productivity Improvement: New features for managing module outlines, creating requirements and changing the order of requirements in modules
- **Impact analysis** – Improvements for system engineers
 - Practitioner concern: Pruning and modifying impact analysis sets
 - Productivity Improvement: Introducing profiles. Users can customize set of filters for impact analysis and use their own profile to generate the diagram

Install – Design improvements for tool admins and project leads



- New Downloads area on the Systems and Software Engineering solution page on Jazz.net

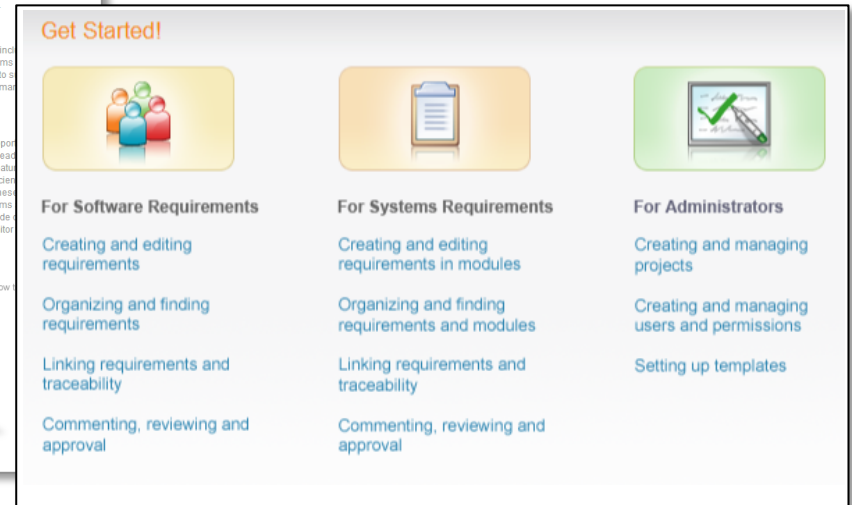
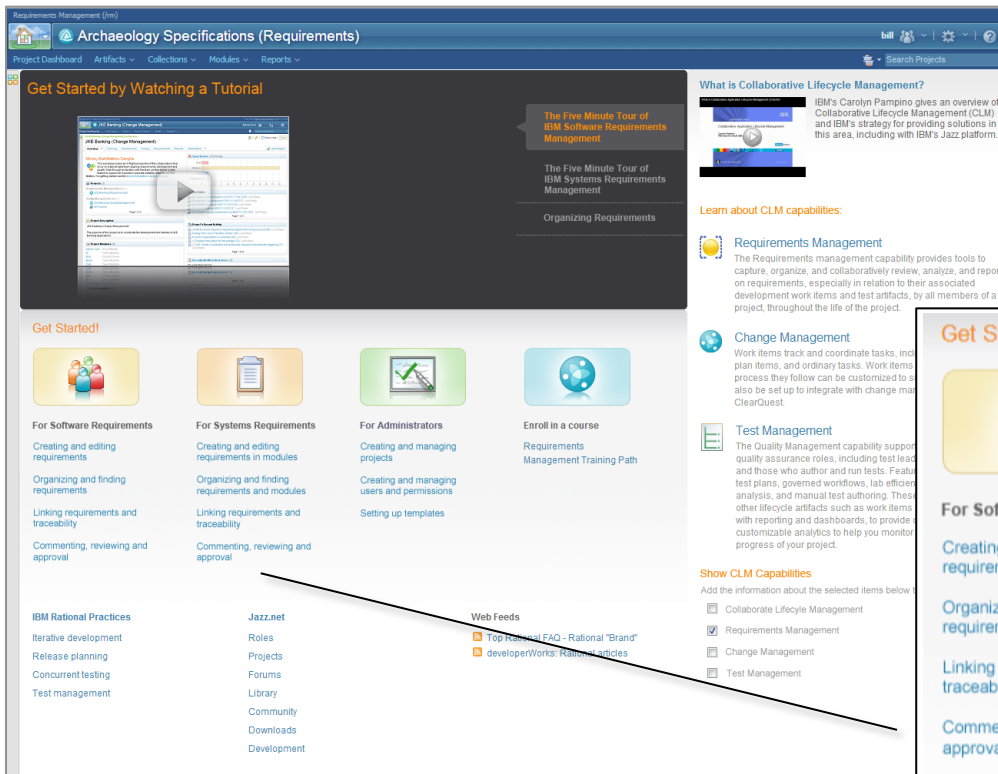
- Release and milestone solution installers
- Product documentation and product guides



- New Systems and Software Engineering solution Launchpad

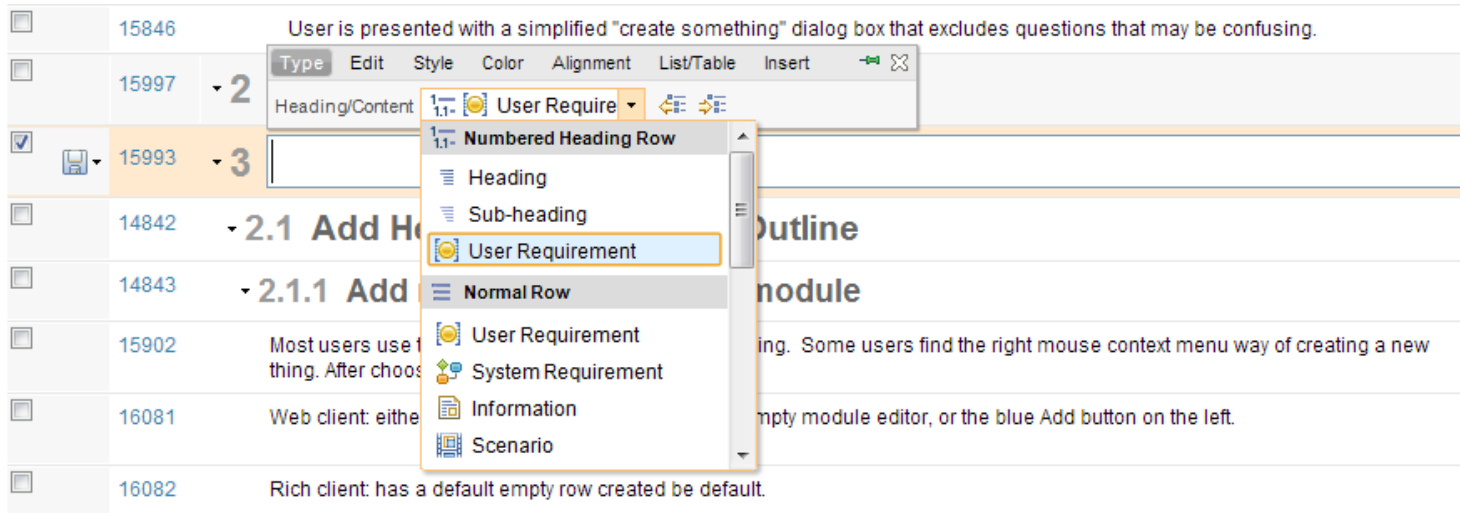
- Express installer for solution servers and clients
- Trial licenses for evaluations

On-boarding – Design improvements for system engineers



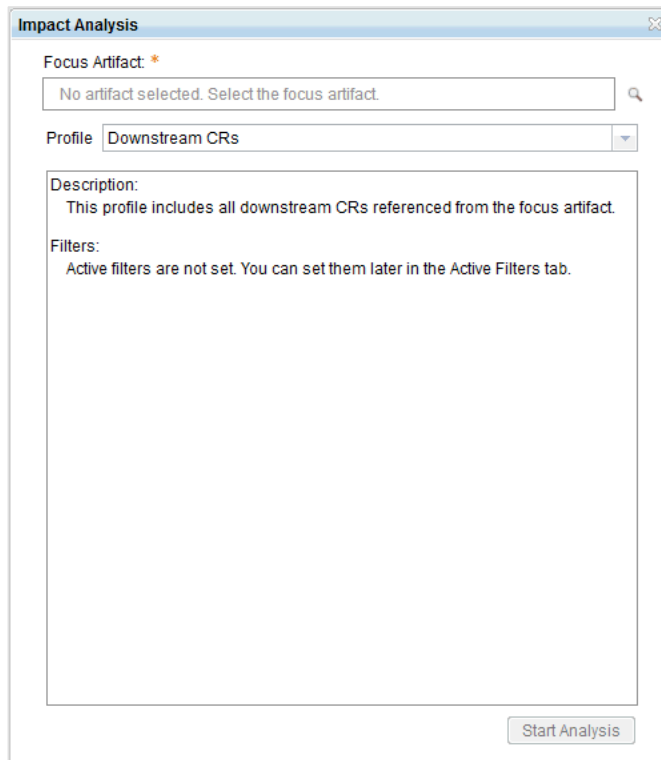
- New Welcome Page for Systems Engineers on-boarding DOORS NG
 - Targeted user education material for on-boarding the role and the tool
 - Information on related tool areas, like change management and test management
 - Additional design improvements to project dashboards for on-boarding and in-flight usability

Organizing requirements – Design improvements for system engineers



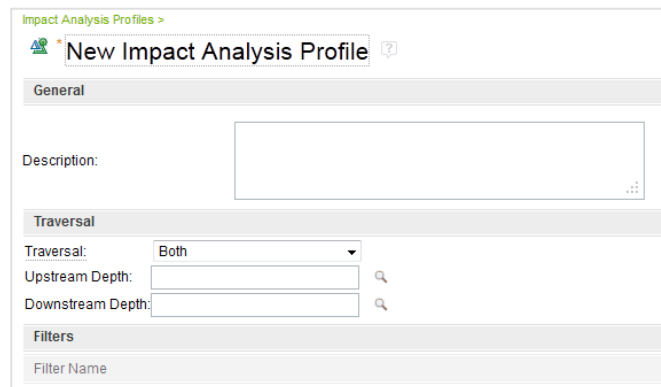
- Improved configurations and usage of module structures in DOORS NG
 - Define requirements types to be displayed as headings
 - Define requirements types to be displayed as module content
 - Simplify setting of requirements types on module requirements
 - Design of improved UI paradigm for creating new artifacts in a module

Impact analysis – Design improvements for system engineers



The screenshot shows the 'Impact Analysis' window. It has a title bar with 'Impact Analysis' and a close button. Inside, there's a 'Focus Artifact' section with a text input field containing the placeholder 'No artifact selected. Select the focus artifact.' and a magnifying glass icon. Below that is a 'Profile' dropdown menu currently set to 'Downstream CRs'. A 'Description' section contains the text: 'This profile includes all downstream CRs referenced from the focus artifact.' Below the description is a 'Filters' section with the text: 'Active filters are not set. You can set them later in the Active Filters tab.' At the bottom right is a 'Start Analysis' button.

- Design improvements to IA usability
 - Configure individual IA patterns to make the process fast and efficient
 - New Impact Analysis profiles with customized set of filters



The screenshot shows the 'New Impact Analysis Profile' dialog. It has a title bar with 'New Impact Analysis Profile' and a help icon. The dialog is divided into sections: 'General' with a 'Description' text area; 'Traversal' with a 'Traversal' dropdown set to 'Both', and 'Upstream Depth' and 'Downstream Depth' input fields with magnifying glass icons; and 'Filters' with a 'Filter Name' input field.

Practitioner productivity topics raised this week.

- “Too complex: too many buttons, too many options. Very hard to get started (or remember if you aren’t using the tool day-in day-out). I wish an **admin could configure the tools for specific roles or tasks**, so users aren’t so burdened.”
- “Enable role-focused UIs and process but not caring about what tools provide the capabilities. Users should not have to become experts in all tools – they **need to know how to do their tasks only**”
- “The “role focus” seems to be more about access control than what that role is trying to accomplish: e.g. the RTC rich client is set up for the Java developer – the **systems engineer or project manager is totally overwhelmed**.”
- “The inception of modeling has to be better than Visio for putting together a proposal. For the last 3 years I have had to **maintain duplicate sets of models** in Rhapsody (where I have wanted to do it) and Visio (because I have stakeholders for which the Rhapsody models are too confusing or don’t look as good or credible).”
- “We have retooled our processes in RMC, but RMC is an isolated product. Beyond RTC, it’s isolate: **Rhapsody, DOORS both ignore RMC**.”



Areas of practitioner productivity improvements

- We have made progress in designing practitioner productivity improvement for Systems personas in 2013
- What **personas should we prioritize** when continuing designing practitioner productivity?
- What **areas should we prioritize**?

Questions

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