# IT@INTEL

# Virtual Assistance Center Advances IT Self-Service

The Virtual Assistance Center has increased customer satisfaction, decreased calls to IT, and improved the user experience.

## Executive Overview

Imagine a computing environment where PCs fix themselves even before employees know there's a problem. Or where employees are notified of issues and receive self-service instructions that don't require them to know a lot of technical lingo or infrastructure details. This vision, consistent with our history of self-service solutions, inspired Intel IT to create the Virtual Assistance Center (VAC). We believe that employee productivity increases when employees spend less time troubleshooting common issues.

We used a holistic approach to IT self-service in creating VAC, which is a consolidation of a number of solutions that we had used previously for frequently encountered issues. VAC provides an extensive and extendable framework for developing, testing, and deploying common fixes, using a shared platform and protocol. While the PC is idle, VAC proactively detects and automatically fixes issues or notifies employees of issues with self-service options.

VAC provides employees with the following benefits:

- **Increased productivity.** Scheduled PC health checks identify and correct some issues without employees' knowledge, providing an uninterrupted user experience.
- **Improved self-service.** Employees can find information and tools to correct issues more quickly and easily.
- **Simpler instructions.** VAC proactively notifies employees of issues, and it enables employees to fix many issues on their own without calling IT or needing extensive technical knowledge.

Beyond serving as a source of PC self-service, VAC is a platform for self-help solution developers. The API provides the most important capabilities for developing and testing new fixes, leading to better IT products. VAC provides self-help solution developers with the following benefits:

- **Improved manageability.** Developers can concentrate on creating solutions while VAC handles the tasks of deployment and updates on PCs through its hosting infrastructure.
- **Reduced risk.** The platform supports incremental development and testing of fixes that reuse previously tested code. This enables us to

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## Acronyms

**PoC**     proof of concept
**VAC**     Virtual Assistance Center

test only incremental changes on each iteration, reducing the risk of introducing new issues.

- **Increased productivity.** The standard API makes development and testing faster and easier.

Overall, the VAC has increased customer satisfaction, decreased calls to IT, and improved the user experience.

# Business Challenge

Critical computing components, such as network access, email, and browsing, are fundamental to employee productivity. When employees encounter problems with these computing components, most prefer to find solutions on their own. But since IT self-service has historically addressed individual functions—like Wi-Fi* connectivity and database access (see Figure 1), which require employees to understand the root cause of the issue as well as to know that self-service tools exist—employees typically call IT for assistance.

Intel IT wanted to leverage our existing tools and knowledge to offer an easy-to-use solution that would not require extensive technical knowledge. We also wanted to proactively correct issues whenever possible, preferably before the employee is aware of them.

Survey results indicated that our customers wanted more PC self-service options, and IT wanted to increase the number of proactive fixes, decrease the volume of calls from employees, and help employees be more productive. Our aim was to minimize interruptions to the user experience.

## BEFORE VIRTUAL ASSISTANCE CENTER
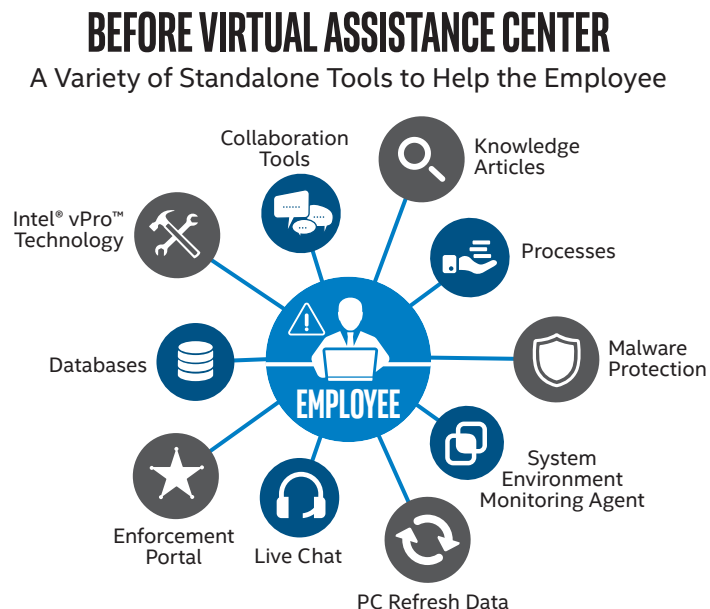### A Variety of Standalone Tools to Help the Employee



Figure 1. Before implementing the Virtual Assistance Center, Intel IT maintained a variety of standalone tools focused on monitoring and managing specific functions in isolation.

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Aligning with our history of providing and improving IT self-service, Intel IT embarked on a new project to proactively manage employee issues. The project included the following goals:

- **Reduce cost.** PC self-healing and IT self-service reduce the number of calls for assistance, freeing both IT staff and our customers to focus on their job functions.
- **Reduce risk.** An extensible solution enables engineers to develop and deploy fixes incrementally and rapidly, reducing the risk of introducing new issues.
- **Increase productivity.** IT self-service enables employees with little technical knowledge to solve issues so they can get back to work quickly.

To achieve these goals, we needed to integrate fixes for the common issues we receive calls about with our existing monitoring capabilities. The result was a single framework that improves PC maintenance and IT self-service.

# Solution

Intel IT has been developing and implementing proactive problem management since 2009. We started with what we had already learned from our existing tools, for example, the Internet browser repair and WLAN health check tools. Using analysis of objective, largely system-generated data from client PCs across our worldwide environment, we've increased client stability and reduced the number of system crashes by more than 50 percent. But our focus goes beyond proactive fixes. Employees have told us that they prefer to fix their own PCs when they understand how to access the tools.
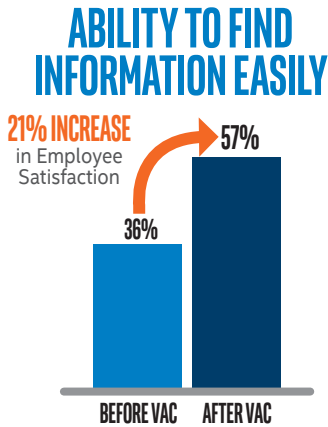
We already had tools to fix the most commonly encountered issues. By centralizing those tools in a more accessible framework, we knew that we could leverage common functionality, providing better IT self-service and gaining greater flexibility in managing the solution life cycle. We decided to develop rather than purchase a solution.

We began developing the Virtual Assistance Center (VAC) in late 2014 and initiated a proof of concept (PoC) in early 2015. Our holistic approach to IT self-service includes these elements:

- **Shared framework.** We redesigned the self-help tools into VAC as a standard, proactive framework.
- **Incremental development.** VAC enables IT developers to add fixes easily over time, reducing the number of separate self-help tools in the environment. New fixes can be developed and tested incrementally for rapid deployment.

## Improvement through Metrics

When the Virtual Assistance Center (VAC) deploys a fix, either detected by the scheduler or through customer self-service, it captures metrics about that fix. Metrics tell us how many times a fix has been executed and how effective it has been. This data helps us improve the fixes. For example, fixes that are seldom used are identified for analysis. Application updates are also routed first to VAC, where they are included in the scheduling process.

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## ABILITY TO FIND INFORMATION EASILY

**21% INCREASE** in Employee Satisfaction

36% **BEFORE VAC**

57% **AFTER VAC**

### Positive Employee Comments

- "I love the clean interface and ease to identify and correct potential issues with my device."
- "I like that it has everything in one place."
- "I like that it tells me about issues detected on my device and gives me links to actions so that I can address them."

- **Proactive detection and response.** When we can detect and notify employees of issues, and then provide the tools to fix them without calling IT, those employees feel more confident that we are managing the health of their PCs and their overall experience.
- **PC self-help and healing.** Through VAC we can schedule actions that run regularly for maintenance and that detect and fix a number of issues.

We initially merged the existing tools into the framework as they were. Over time, we integrated their underlying logic using a standard API. The platform solution converted our existing tools into a single framework of standardized commands for an outcome that exceeds the sum of its parts. For example, an automatic fix deployed now might later include interactivity without having to be rewritten. Consolidation also offered the ability to monitor results more closely for better solutions over the long-term.

VAC also includes a scheduler for PC health checks (see Figure 2) that run when the computer is idle, minimizing performance impact to employees. VAC proactively resolves issues when it can. When it cannot, it notifies employees with information on how to resolve the issues. Employees can also manually run the tools when they encounter issues on their own.

## Proof of Concept

We deployed a PoC to primarily IT and early adopter participants because of their higher-than-average tolerance for technology issues. The group comprised 160 employees. The follow-up survey results showed gains in satisfaction ratings. Employee comments were positive.

During the PoC, we identified and fixed several issues, including Wi-Fi and network-certification issues as well as enrollments to IT services such as encryption and password issues.

Since completing the PoC, we have implemented two new self-heal fixes, and we have three more in production.
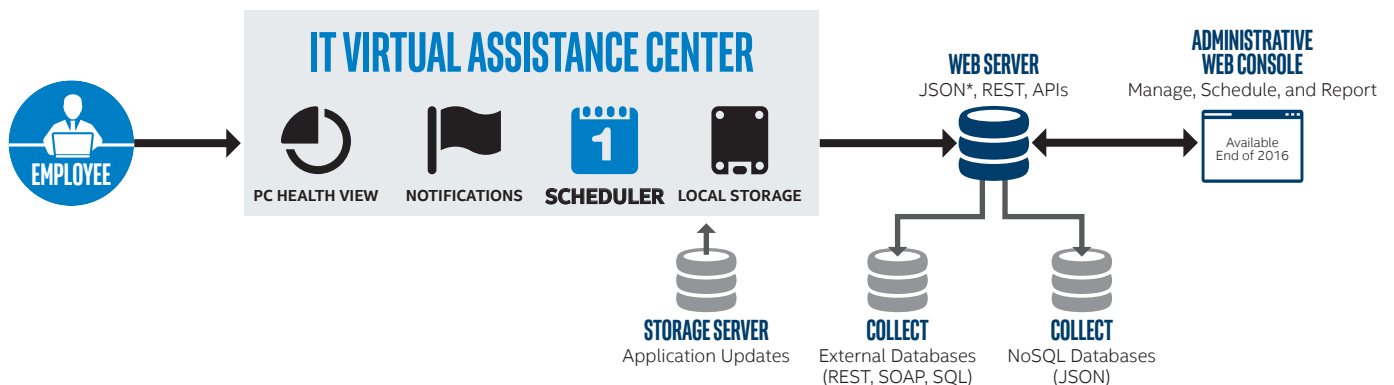


Figure 2. Virtual Assistance Center schedules silent PC health checks, and then either resolves the issues automatically or notifies employees with self-service information. Checks run when the PC is idle, avoiding any interruptions to the employee.

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## Value in Productivity

VAC improves productivity for both IT and our customers. It reduces the cost of supporting employees and improves the user experience. VAC enables highly mobile employees, such as Sales, to remain mobile without the need to call IT when they encounter issues. Employees can be away from the office yet have access to reliable tools for IT self-service 24/7.

### Intel IT Benefits

VAC is as much a platform for developers as it is for IT customer self-service. The API provides the core capabilities for developing and testing fixes. This shortens both development and testing time, leading to better IT products. These benefits align with our original goals:

- **Reduced cost.** With proactive detection and resolution, both silently and through IT self-help tools, we reduce the number of calls to IT, reducing the cost of supporting our customers. We also need fewer developers, and we produce fixes more rapidly.

- **Reduced risk.** The platform supports standardized incremental development based on previously tested code and rapid testing of fixes, making employee devices less vulnerable to the introduction of new issues.

- **Increased productivity.** With the standard API, development and testing is faster and easier, enabling developers to focus on new issues.

### Employee Benefits

Our customers have told us that they prefer to use IT self-service tools when they encounter issues. In the past, they often did not have this option because the fixes required an awareness of various tools and more technical knowledge than many employees had. With VAC, automated checking can now discover and resolve some issues, such as network certification validity and expiration, before the employee is even aware of a problem. For example, VAC detects large files before the user experiences the symptoms of dwindling storage space. And when employees do need to fix issues on their own, they can find the information more easily, and they need less technical knowledge.

"I like that it tells me about issues detected on my device and gives me links to actions so that I can address them."

## IT Self-Service Results

VAC gives IT the tools to identify issues that were previously difficult to quantify, gather more data, measure the quality of IT products, and deploy solutions faster. The platform enables us to respond to employee needs faster and with better solutions. In the first three weeks after deployment, we added one automatic fix and three proactive checks, as well as continued general tool improvement. IT self-service and PC self-healing have reduced interruptions and the need for advanced technical understanding. VAC improves access to help with improved customer self-service.

Having proven the benefits of VAC, we are moving toward a global rollout. The majority of employees will have VAC services by the end of 2015.

# Conclusion

Given Intel's increasingly complex compute environments, Intel IT's long-term focus remains on providing self-service solutions that help employees resolve PC issues with as little impact to their productivity as possible. With the aim of reducing or eliminating employee interruptions, Intel IT developed VAC to automate PC health checks and improve IT self-service.

The VAC platform also standardizes common tools that enable the system to automatically detect and resolve certain issues without interrupting the employee and notify employees when issues that require interaction arise. When employees encounter issues on their own, IT self-service tools provide solutions with minimal need for advanced technical knowledge. The scalable design benefits IT because developers can add and test new fixes using a standardized API that eliminates the risk to existing functions and speeds the development of new solutions.

Since implementation, VAC has boosted overall customer satisfaction, decreased calls to IT, and improved consistency in the user experience.

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