AVSYSTEM

UMP Smart Workflows

Fully automated customer care

Introduction

Each day, operators of the customer care center are swamped with issues reported to them by customers. The operator has to pick up the phone and go through the lengthy procedure of questioning a customer in order to find out what the issue is. And it can be anything—from slow Internet connection to weak WiFi signal to DHCP configuration problems. This, in turn, means that the operators have to be carefully trained to be capable of solving a wide variety of problems. Furthermore, many of such issues are repetitive and solving them manually each and every day can be at the same time error-prone and morale-depleting. The problems customer care is facing are not limited to the huge number of reported issues and the lack of automation in solving them, they are also related to knowledge transfer, slow employee onboarding and staff rotation.

Yet, we at AVSystem believe that the future of customer care can be painted in a much, much brighter colors with the use of just the right tools, and we believe that our UMP Smart Workflows solution is just the tool your customer care needs.

Smart Workflows

UMP Smart Workflows solution simplifies the everyday job of customer care operators by offering them a tool representing their business procedures in a span of a single graphical panel. In this panel, they can run a series of ready-to-use steps which guide the operator to the source of the problem. The steps include the sequence of online actions with devices, sequence of business steps (without session to the device) or graphical scripts for interaction with end-customers. The operator can either use a predefined library of workflows containing AVSystem's device management expertise or easily define their own workflows to reflect their exact business procedures. Smart Workflows solution is also integrated with UMP's Monitoring so that device repair actions can be performed by an operator right after the alert is raised. After the repair is well-tested it can also be performed automatically without the operator's assistance preventing the end-customer from even noticing the issue. The long-term vision for the platform is to gather intelligence on how the operator solves the device problems, learn and then solve them autonomously, reducing the operator's troubleshooting duties to just keeping an eye on platform's periodic automatic intervention reports.

Manual workflows mean quicker reaction to customer's issues and reduced time of every call. Automated workflows bring less manual labor and less customer issues calls in the first place. By mapping your business procedures in the process, you reduce the onboarding/training costs and decrease customer care operations costs as well. At the end of the day, as your customers are more happy and customer churn decreases, you can step up your upselling game, customer acquisition strategies and your other innovative activities generating new revenue streams.

Examples of available Smart Workflows' steps
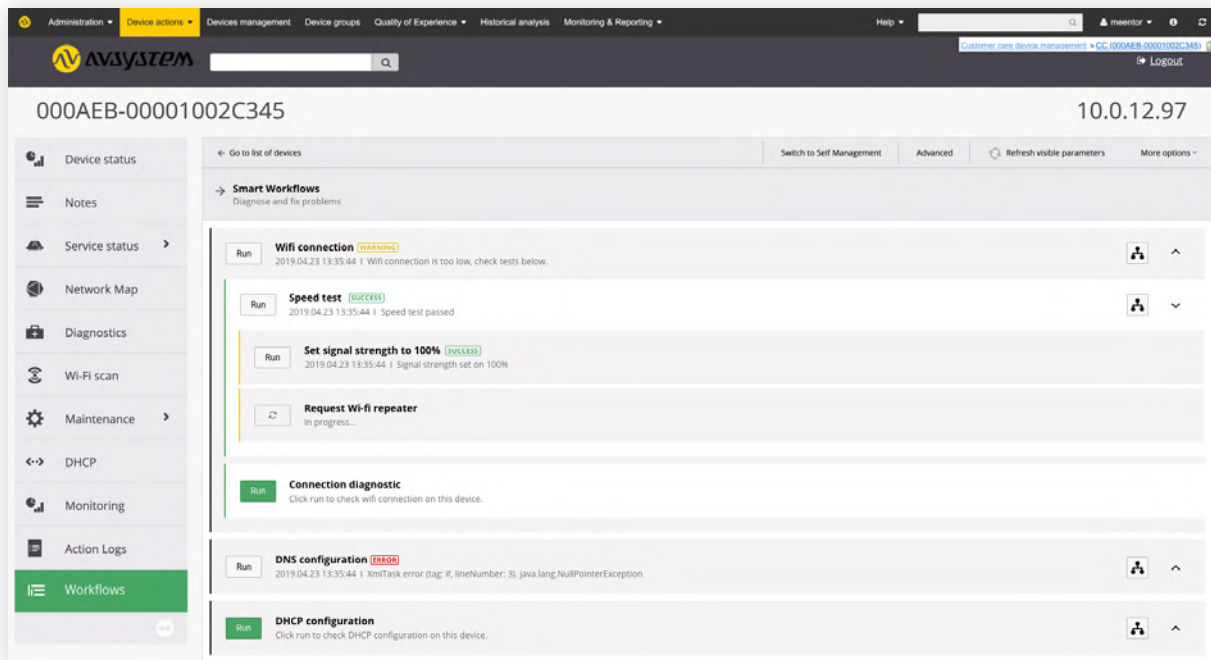
Examples of online, device related steps:

• Firmware Upgrades
• Set/Get Parameters
• Diagnostics tests
• Configuration Backup/Restore

Examples of business steps:

• Customer status update in CRM/BSS/OSS
• Fetching properties related to service subscription
• Notifications

Examples of GUI steps for interactions with customers:

• Response templates using positive scripting
• Queries/Surveys
• Operations based on customer input

Benefits for customer care

Quicker and more efficient problem solving

Workflows, at the click of a button, allow for an easy diagnostics such as performing IP Ping, Download/Upload test or getting WiFi scan results. After that, you can perform the repair action to improve device security, configuration or WiFi channel choice.

Growing knowledge base

Make use of AVSystem's expertise in device management—apart from existing library of multiple ready-to-use workflows for common problems, after each UMP release, workflows set is extended with additional recipes based on experience AVSystem had in helping our customers in over a hundred deployments.

Fully automated customer care operations

Workflows can be triggered both manually and automatically, making them a perfect solution for a large variety of problems that with the right monitoring can be solved before the end-customer is affected. Let automation bring your customer care to the next level!

One customer care system to rule them all

Thanks to business steps, workflows can easily integrate with your existing CRM/OSS/BSS using API calls. With workflows, not only can you display new information from other systems in any visual way you need, you can also update them in an automated manner. Working in a multi-system environment can be easier than ever thanks to workflows integrations!

Tailored to your business procedures

You can easily adapt workflows to your needs by extending existing ones or creating them from scratch. They allow you to map your business procedures in a way that was unavailable with the use of the conventional graphical interface before. Create them once and make onboarding new operators a breeze!

Massive campaigns, easier than ever

Workflows can be launched on a massive scale enabling problem analysis as well as solution synthesis on single devices as well as on whole device groups. Advanced, large-scale device operations previously requiring detailed knowledge of the system's mechanics can be performed by simply following your workflows.

End-customer self-management

Since workflows can also be executed from a UMP Self-Management mobile app—you can design easy-to-understand steps that your end-customers could take themselves to off-load your customer care.
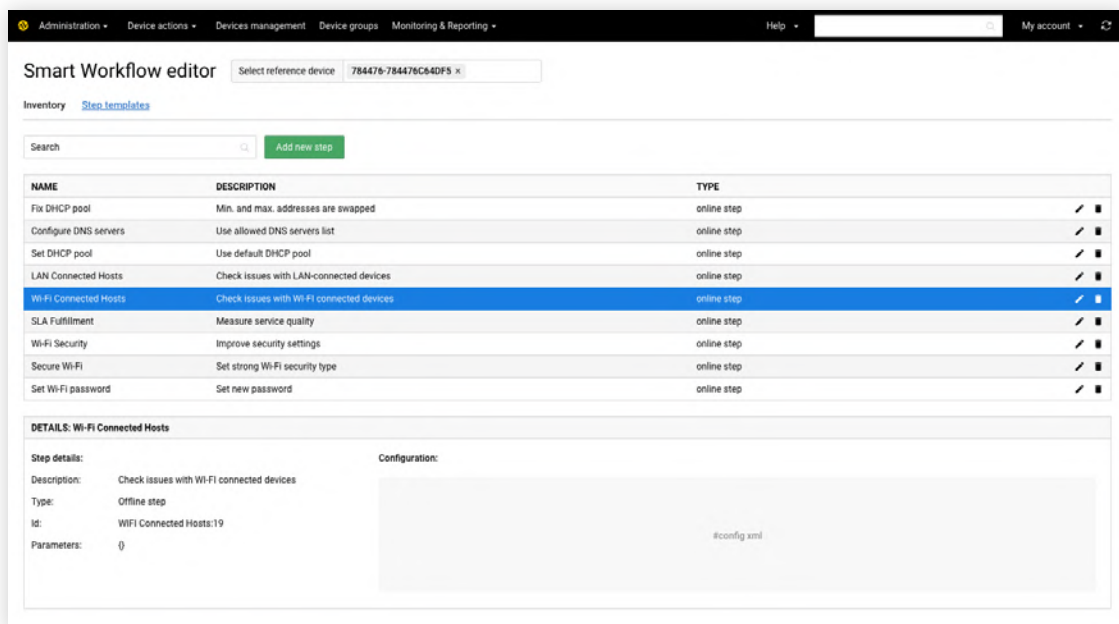
In future releases, AVSystem will be working on making the UMP Smart Workflows even more insightful through introducing new machine learning and AI-driven functionalities, such as automatically learning repair actions or automatically suggesting most often used call scripting.

Want to know more? Below are two in-depth use-cases chapters. The first one gives you a full grasp on workflow mechanics guiding you through a concrete example of DHCP configuration workflow. The second chapter gives you insight into how workflow-monitoring integration can help you transition your customer care to a fully automated future.

Real world use-cases

# Smart Workflows use case #1 —DHCP Configuration

Problem statement

In order to really see and understand the value added by workflows, let's examine the use case of performing thorough maintenance check on a device. Let's say the customer is calling with the issue. He has logged into his router management portal, changed several settings, but he doesn't remember which, and now his new devices cannot connect to his router. He doesn't want to reset his device, he just wants your operator to check if everything's fine.

Standard solution

The operator has to guide the user through the settings over the phone. In a more positive scenario, the operator logs into a management platform, checks the customer's settings for MAC whitelisting and blacklisting, WiFi security, transmission bands, standard, power etc. Then, after fifteen minutes, the now angry customer is informed that the DHCP server on the router was not only disabled, but had misaligned available IP address pool. What if this story went differently?

AVSystem solution using workflows

With workflows, this couldn't be more easy. Let's go through what the operator could see if his system of choice was UMP with Smart Workflows. First, after entering the panel, we can see a list of workflows available by default, including those for WiFi security, changing WiFi channel, DNS configuration and many more. Let's choose the DHCP configuration to see what's under the hood.
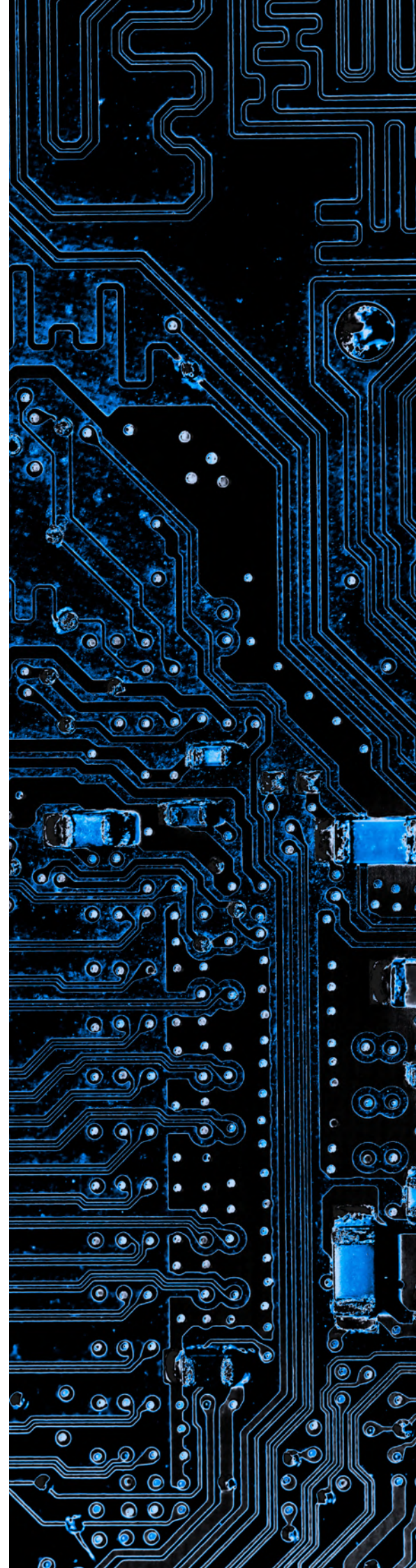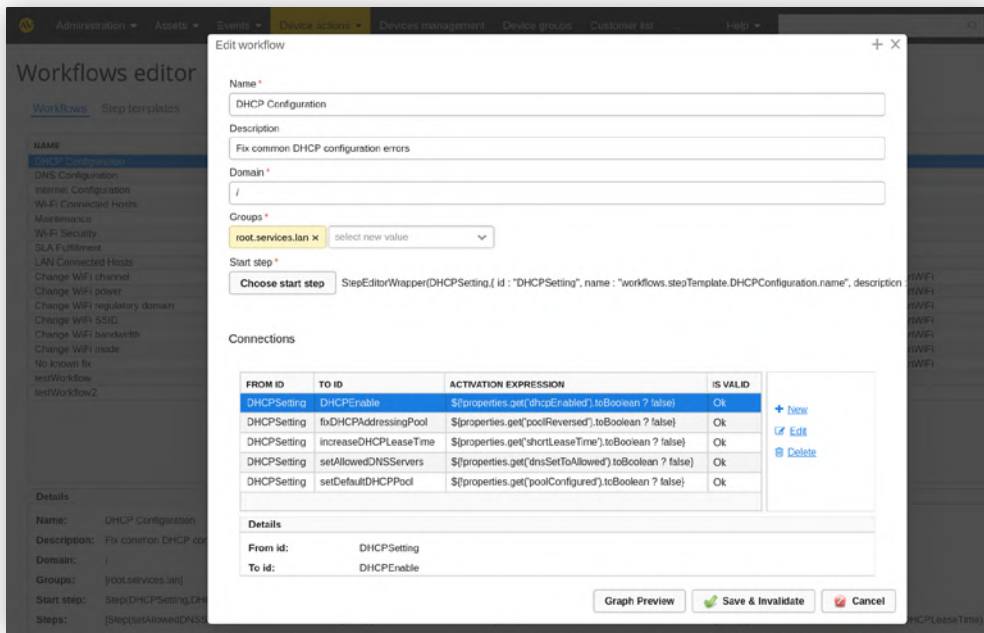
We can see that there is always one starting step after which we can define any number of additional connections, each activated by a certain condition.

We can click "Graph Preview" to see a visualisation of how these steps and connections form a graph.
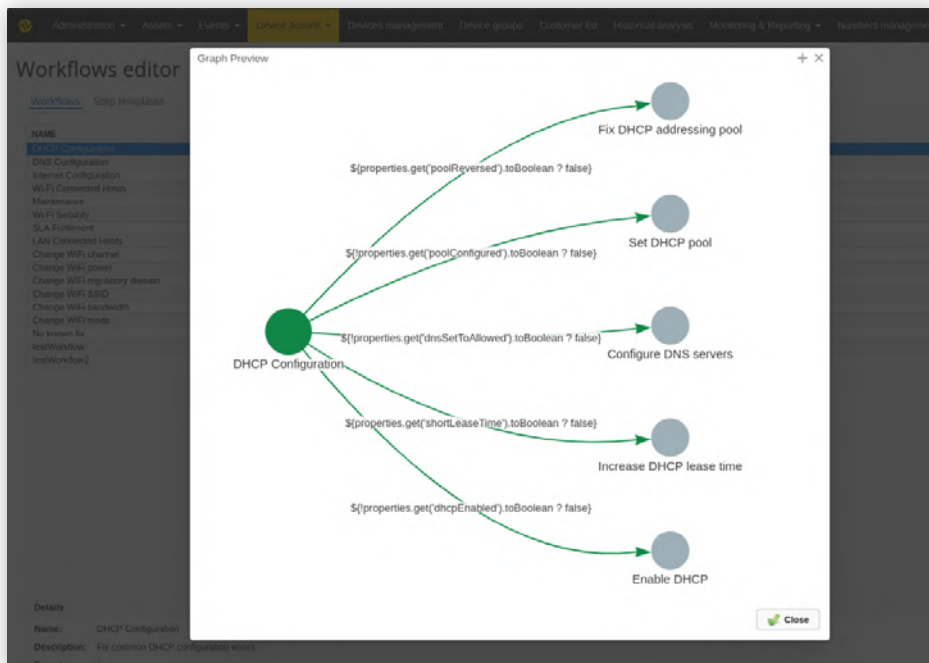
We can clearly see now that once we run initial "DHCP Configuration" step, we expect that we might encounter invalid DHCP IP address pool, disallowed DNS, short lease time or even disabled DHCP.

So what does the initial "DHCP Configuration" step do? We can go to "Step templates" panel to see what actually happens in the initial step:
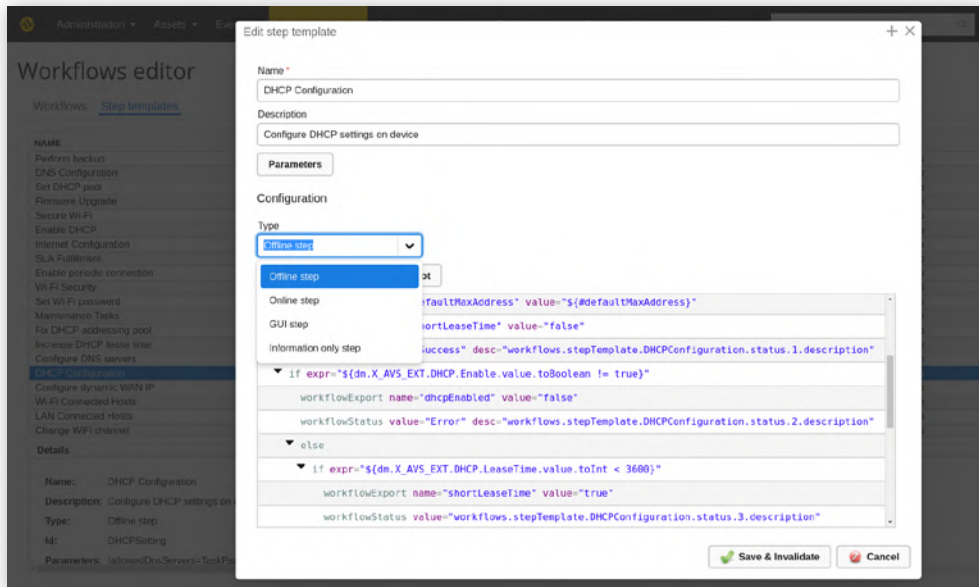

We can see that it is an "Offline step" type—that means that when executing this step, no session to the device will be performed and we have to rely on our diagnostics of the data gathered from the device previously or the data from external CRM/OSS/BSS. This is important, as some devices cannot be freely accessed at all times.

We can also see that there are multiple types of steps besides "Offline step"—all of them have different characteristics:

• Online step performs session, connecting to the device using reusable task templates, so that we can get fresh information and perform new diagnostics

• GUI step allows to display information to the Operator—i.e. when performing the diagnostics after initial step, we might see the results in, for example, router's WiFi hosts. Graphical interface can be freely designed using UMP Setting Panel

• Information-only step—sometimes all we can do is display simple information, i.e. when after a series of diagnostics the only solution would be to install a WiFi signal repeater or schedule field operations technician

The step logic is written using built-in XML editor, the same as in UMP tasks. We can see the condition checks for device data model that cause various step outcomes—the disabled DHCP and short lease time are presented on the screen.

Let's see what happens after running our DHCP initial step in the customer care interface of a sample device.
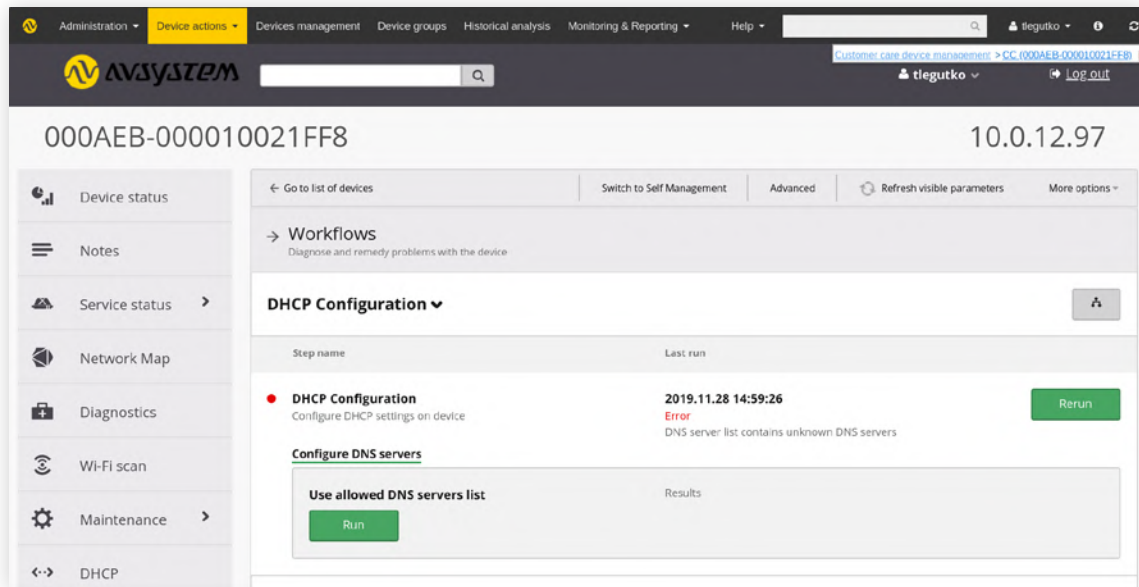
We can see that out of 5 available follow-up steps only one is presented—this is expected, as in this case DHCP server has most of its configuration done correctly with only the DNS causing problems—thanks to the conditions on workflow connection—the operator is presented with only those steps that require his attention.

Revisiting the story of the customer care operator at the beginning of the chapter—now it's clear that with the use of the UMP Smart Workflows solution the operator solved the issue orders of magnitude more efficiently. First, he could run various workflows to diagnose the customer's problem and then just run the repair action to correct DHCP setup. All within a span of several seconds, saving both his and customer's time and making their interaction experience so much better. This is the difference the UMP Smart Workflows solution makes in day-to-day customer care operations.

Smart Workflows use case #2— WiFi monitoring performing automatic repairs

Problem statement

Again, let's consider a basic customer care story to explore how monitoring and workflows can automate customer care. Let's say an operator receives a call from a frustrated customer claiming that his WiFi works very slow since the beginning of last week. If the operator doesn't use a management platform with WiFi monitoring, he lacks historical context and has less solutions to choose from. The issues might range from poor signal to particular device or overpopulated WiFi network to channel automatically chosen by the device being overused by neighboring routers. Diagnosing the issue can not only be a lengthy process, but there's a fairly good chance that the operator will not be able to propose any working solution at all.

Standard solution

Over the years, UMP has gathered a really large amount of insightful monitoring operations, providing historical trends, reporting and alerts of key parameters for devices using various access technologies. But no matter how insightful the analytics, after receiving an alert from either the monitoring or the call from end-customer, often the actual repair action must be performed. Previously, a well-trained operator needed to navigate to appropriate GUI panel or even write a task for less standard cases. In the case of customer issue with slow WiFi—an operator could see frequent WiFi channel switches and multiple connected clients from analyzing multiple monitoring charts, but the process was not only slow and inconvenient—it also required a well-designed and tedious staff onboarding process. What if there was a better way?

AVSystem solution using workflows

UMP Smart WiFi solution is the answer thanks to the use of workflows! Smart WiFi is not only a flagship UMP monitoring offering crucial insight into end-user home WiFi performance but also an algorithm allowing to choose the best WiFi channel, and now it even makes alert repair actions easier than ever. After seeing the diagnostics, the operator can apply the solution right away, right in the same graphical panel.
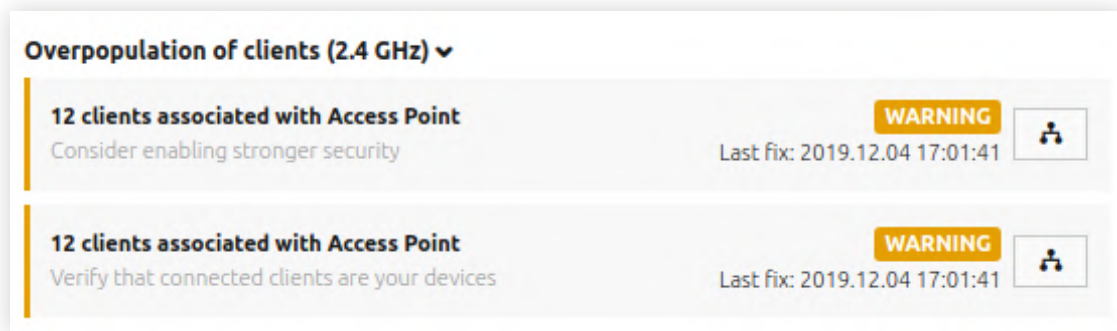
In the above mentioned use case of slow WiFi, sometimes the solution is to let the customer know that his home network has a suspiciously high amount of connected devices, which might be caused by WiFi security turned off resulting in neighbor devices being illegally connected to his network. Since the workflows are configurable in the GUI—operators can easily extend monitoring repair actions with their own custom scripting. But as great as it sounds, some technical actions (in this case a low transmit power setting on a device) still require a manual action by an operator. Can we do better?
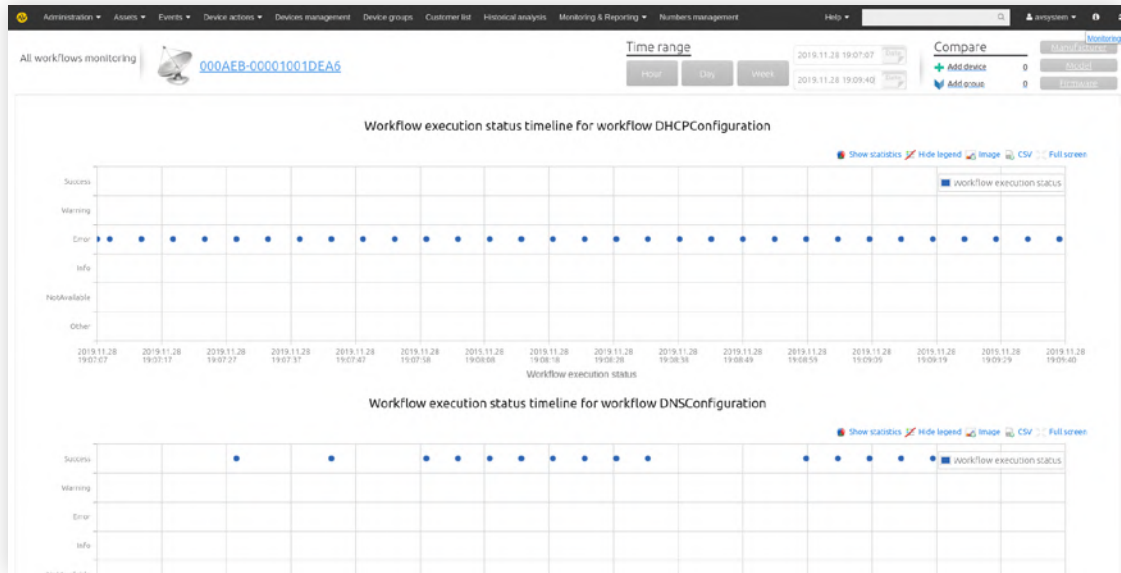
AVSystem is once again proud to answer with a resounding "yes"—workflows themselves can be run as monitoring! This way the operator can follow historical trend of initial step workflow diagnostics—either his custom ones or multiple default ones provided using AVSystem's expertise in device management. And once the workflows for the particular operator's use case are battle-proven during numerous manual interventions, all that's left to do is to mark them as automatically executed monitoring workflows. Now, the operator only needs to check the historical reports from time to time to witness how his tool solves his end-customer issues. Lack of manual errors, full historical introspection with analytics and repair actions happening before the customer even notices his issue—simply rock-solid automation.

What we're describing is unprecedented on the market. We believe that you need the absolute best tools to answer the needs of a modern customer care center and choosing UMP's Smart Workflows solution is the right way to go.

UMP

Unified Management Platform (UMP) is a highly scalable and flexible multi-protocol system for provisioning, management and monitoring of various types of devices. As an industry-proven device management platform UMP offers many powerful mechanisms that allow efficient management of any type of devices via various protocols. Some of the platform's features are:

- Single and group device automated management
- Flexible modelling of customer business processes and provisioning workflows
- Customer Care with configurable Graphical User Interface
- Quality of Experience with diagnostics, monitoring and comprehensive reporting for devices and groups

- Scalable architecture, high availability, capable of handling millions of devices
- SLA guarantees with 24/7 premium support
- Easy integration with OSS/BSS systems
- Devices auto-discovery
- Multi-tenancy
- Mobile Self-Management

Your next step

If you want to learn more about UMP Smart Workflows Module or UMP itself, contact us at **sales@avsystem.com**.

About AVSystem

No IoT deployment is successful without proper device management—this is what AVSystem stands for.

With more than 100 deployments all over the world, AVSystem is an expert in its field. We help companies around the world deliver better quality of service thanks to our top-class device management solutions. We also focus on WiFi VAS & indoor location as well as other systems for SDN and NFV. Apart from creating software, we actively participate in the standardization process of the LwM2M standard to enable secure device management and service orchestration in the IoT ecosystem. 100+ large companies worldwide prove the superiority of AVSystem's technology.

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