Orchestral.ai

Composer Use Case Solutions
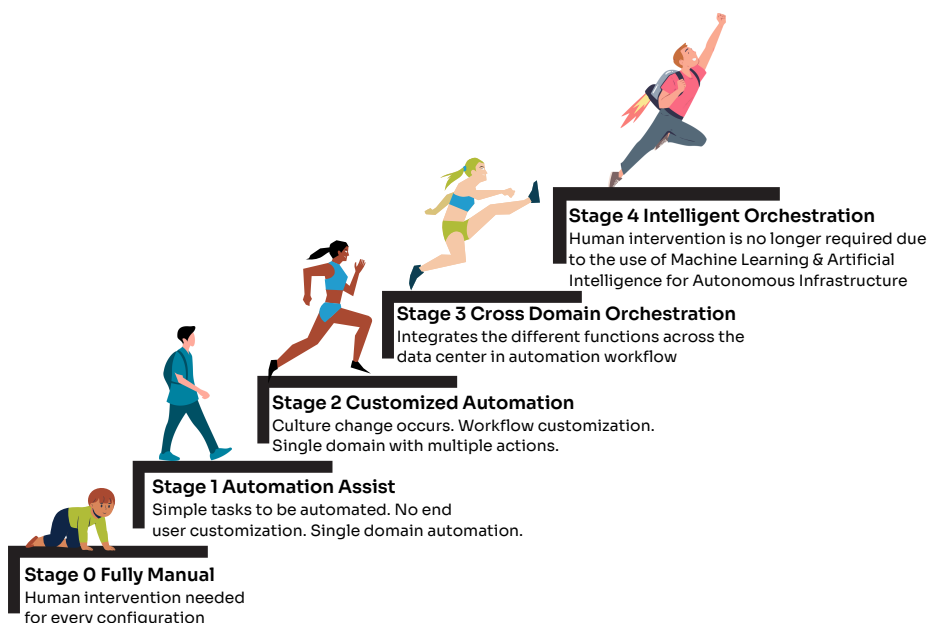
Composer Use Cases

IT Infrastructure Automation and Orchestration are a Journey

Infrastructure Automation and Cross-Domain Orchestration are a journey while traveling the path of Digital Transformation. It is both a challenge and an opportunity for enterprises seeking greater agility and efficiency to stay competitive in their industries. IT teams are currently managing multiple vendors and trying to work across domains to help ensure that processes are being properly executed. Bridging these domains requires heavy configuration and time-consuming manual labor, adding difficulty to the technological shift and translating to digital transformation fatigue. IT infrastructure orchestration helps alleviate these key pain points while easing the management of complex tasks and workflows.

Orchestral.ai delivers the Composer platform enabling Intent-Based Intelligent Infrastructure Orchestration for customers across different industries. The Composer platform's capability to have both a drag-n-drop UI along with templated coded workflows allows Infrastructure and Operations (I&O) teams to adopt Agile and DevOps methodologies; enabling digital transformation in their organizations to ultimately deliver Autonomous Infrastructure capabilities.

- Business requirements are accurately met and captured through its Declarative (visual) User Interface

- Business and IT Processes are mapped out in visual workflows with forks, joins, parallel tasks, data queries and data transformations

- Drag and drop user interface empowers Citizen Developers to create critical business and IT workflows

- Services across IT domains are securely orchestrated within the infrastructure

- Communication of infrastructure components are streamlined, assuring the transfer of the correct data. Critical functions of the MAPE (Monitor, Analyze, Plan and Execute) loop are also provided

- API endpoints for every workflow contribute to advanced API-Economy capabilities of the enterprise

- The stages and phases below help represent the process leading to Orchestral.ai's success with automation and orchestration, which eases the digital transformation journey itself.

Stage 4 Intelligent Orchestration
Human intervention is no longer required due to the use of Machine Learning & Artificial Intelligence for Autonomous Infrastructure

Stage 3 Cross Domain Orchestration
Integrates the different functions across the data center in automation workflow

Stage 2 Customized Automation
Culture change occurs. Workflow customization. Single domain with multiple actions.

Stage 1 Automation Assist
Simple tasks to be automated. No end user customization. Single domain automation.

Stage 0 Fully Manual
Human intervention needed for every configuration

Virtualization Lifecycle Management

Virtualization lifecycle management is a key component of progressing a company's automation journey. Being able to utilize cross-domain orchestration to connect virtualization teams with other IT specific teams via automation allows for IT teams to proactively respond to provisioning requests, performance degradations, outages, IT tickets & issues while minimizing underutilized resources and time spent.

Enterprises require an agile virtual infrastructure to remain competitive. But maintaining that agility is increasingly difficult (especially at the enterprise level) when your data is exploding across multiple cloud providers, SaaS applications and private data centers. For larger organizations, monitoring and managing these resources has become an enormous investment of time and money that can constrain growth. Managing these systems requires a series of routine workflows and processes performed by skilled IT personnel throughout multiple domains of knowledge. But with Orchestral's Com- poser these processes can be significantly streamlined and accelerated, while ensuring companies can continue to use existing automation tools & scripts within large orchestration workflows. Composer is able to easily automate virtual infrastructures from Day Zero deployment through Day N creates, reads, updates and deletes.

Infrastructure Challenges

- Data Store space exhaustion on a virtualization platform is a common place which requires fast and accurate addition of storage to maintain application SLAs

- Provisioning involves multiple operator groups across multiple IT domains which can greatly increase lead times by days/weeks and reduce business agility

- Multiple points of failure due to errors in provisioning and deprovisioning that occur during transfer of data between disparate IT domain touch points

- Disparate tools lack harmony which inhibits the use of a self provisioning portal

- Increased cost of infrastructure and management due to idle and unused systems

- Troubleshooting VM alerts can be time consuming and inhibits mean time to resolution

Use Case Solutions

▪ Zero Touch Provisioning of Virtual Machines

▪ Event-Driven Automation and Remediation via vCenter Event Sensors

▪ ESXi Host Failure, Migration Monitoring and Automation

▪ Event-Driven and Policy Based VM Storage Utilization Auto Remediation

▪ Cross-Domain Backend for Enabling VM Self Provisioning Portal

▪ Hybrid & Multi-Cloud Virtual Machine Management and Sprawl Remediation

▪ No Need to Rip and Replace. Easily Incorporate Existing Scripts and Automations.

▪ Pre & Post environmental preparation and clean up after initial automation processes

Network Automation and Orchestration

Flexibility and agility of infrastructure management is essential to successful mission and business outcomes. Effective network operations are central to the success of any enterprise. As technology has evolved, so too have network capabilities, including the introduction of virtualization & cloud strategies that have enabled higher levels of agility and flexibility. However, network operators still rely on many manual processes & domain specific scripts that require the expertise of highly-trained professionals and are subject to vulnerabilities introduced through human error. These operational realities can lead to infrastructure downtime and loss of business productivity, which leads to increased costs while inhibiting business agility.

Orchestral's Composer exists to maximize IT agility & business continuity by ensuring that the foundational network availability is maintained. Using Composer's event-driven auto-remediation capabilities provides teams the capability to orchestrate workflows that immediately remediate outages without the need for human interaction. NetOps teams can create cross-domain orchestration workflows that integrate with the network layer, security layer, business applications, ITSM tools, etc. to ensure historical information is captured of every automated action so audit and compliance requirements are met.

Infrastructure Challenges

- Risk of exposure and security threats are multiplied due to out of compliance devices that persist in the infrastructure

- Alert and ticket priorities are unknown leading to IT Staff treating all levels of outages as severe events

- Manual handling of code can be counter productive throughout the development lifecycle of development, quality assurance, build, and deployment

- Dedicated headcount spending hours auditing network device configurations to ensure they meet the compliance standards

- Inundation of alerts to the NOC team creating an immediate need for resolution and challenges prioritizing business needs in meeting critical SLAs

- Lack of visibility and repeatability around the development lifecycle process and inhibited testing leading to single points of failure and extended bug cycles

- SD-WAN automation complexity where a power user must manually interact with controllers for Day 0, Day 1 and Day N operations when deploying and managing devices

Use Case Solutions

- Automated Actions and Workflows for Recurring Network Device Configuration and CLI Input

- Auto-Remediation of Network Configuration Drift With Audit History

- Event-Driven Network Device Auto Remediation

- Event-Driven Network Stack Auto Remediation

- From Code to Device; NetDevOps CI/CD Pipeline Orchestration

- Embracing Infrastructure as Code via Cross-Domain Orchestration

- Empowering ITSM Tools via IT Ticket Automation

- Multi-Domain SD-WAN Orchestration
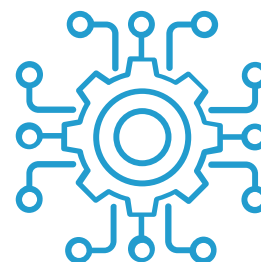
ITSM Ticket and Process Automation and Orchestration

Efficient management of IT services and ticketing tools is a critical component of an enterprise's automation journey. As organizations are looking forward to automating the majority of the processes, a highly effective ITSM leads to increased client experience, enhanced employee productivity, better employee satisfaction & retention leading to a reduction of business expenses.

Acting as the central source of truth for many enterprises, enhancing ITSM tools can unlock many competitive advantages throughout an enterprises infrastructure. However just creating ITSM tickets to be assigned to personnel is not enough. With ITSM automation and orchestration, organizations can significantly improve the operational efficiency and overall productivity by the streamlining of processes and the elimination of mundane repetitive manual tasks. As businesses move further towards a self service IT model, it is important that ITSM tools can be enhanced with a powerful, yet easy to use, cross-domain event-driven orchestration capability.

Infrastructure Challenges

- Loss of productivity and business agility due to extended lead times of open tickets

- Impacted customer satisfaction and retention due to extensive lead times and poor resolution outcomes

- A lack of automation creates a scenario where on average, 30% of IT tickets are escalated to L2 support which creates a 3x cost associated with resolution

- Decrease in customer retention and loss of business revenue due to low quality ticket response capabilities creating brand damage in a shifting competitive landscape

- Enterprise organizations on average spend 75% on operational activities: executing service requests, closing incident tickets, and delivering changes

- Disparate tools are working asynchronously which impact the creation and effective execution of a Self Provisioning Portal

- Enterprises are unable to empower IT teams due to the need for teams to focus on manual remediation of tickets; leading to lack of innovation and business agility

Use Case Solutions

- Event-Driven Automation of Simple Requests Lead Towards Shift Left Ticket Model

- User-Driven, Multi-Domain, Self-Service Provisioning Portal via ITSM Ticket Orchestration

- Event-Driven Security Changes on ITSM Ticket Creation

- Event-Driven Automated Policy Updates

- Empowering your ITSM Tickets with Hands-free Event- Driven Automation Capabilities

- API and Webhook Capabiltiies to Receive and Push Data To and From ITSM Systems
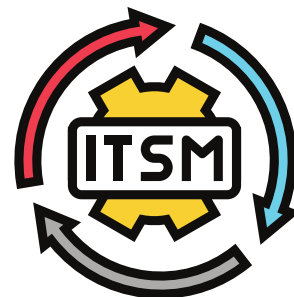
Hybrid Cloud Resource Optimization

The swift adoption of hybrid and multi-cloud architectures threatens to obscure organizational views of asset usage. Lack of visibility poses challenges to optimally allocate resources, and in maintaining control of employees' usage across pub- lic and private clouds. Proper cloud management hygiene is critical to increasing visibility and boosting business agility, efficiency and oversight. However, cloud resource management demands complex decisions and policies for multi objective optimization.

Cloud infrastructure's scale can lead to a tangled web of interactions of the system across a large population of users. This can make effective cloud resource management difficult. To manage this complexity, Orchestral's Composer plat- form offers a comprehensive cloud resource management solution with over 450 "out of the box" integrations that en- able it to orchestrate workflows between cloud and on-prem services and teams.

Infrastructure Challenges

- Cloud resource sprawl is not properly maintained which contributes to significant management and cost overhead

- Resource sprawl can impact data protection efforts by complicating disaster recovery strategies and increase redundant business critical system backups

- The effect on compute, storage and network resources throughout multi-cloud deployments can translate to increased costs due to deployment of redundant IT infrastructure

- If unused VMs are spread across multiple hosts and actively running, they can continue towards decreased network bandwidth for routine maintenance tasks. This can affect both virtualized and bare-metal applications

- Substantial cost to the business with recurring licensing fees for unused or underutilized resources

- Difficulties in forecasting resource utilization due to uncertainties with unused VMs and over provisioned cloud resources

- Unused virtual resources are not patched which creates audit and compliance issues; ultimately increasing risk of security vulnerabilities

Use Case Solutions

- Hybrid Cloud Resource Sprawl Management and Migration

- Policy Based Hybrid & Multi-Cloud Resource Provisioning & Deployment

- Hybrid and Multi Cloud Infrastructure Integration

- Orchestration Back-end for Hybrid & Multi Cloud Provisioning Portal

- Rules Driven Expert System Capabilities to Orchestrate Policy Based Operations
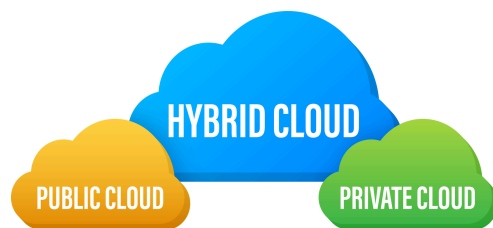
IT Security Orchestration

As enterprises move to become more remote workplaces while maintaining agility in development and operations, IT security teams must adapt by understanding the real-time state of the organization's security posture. IT security teams need to implement preventive maintenance to avoid compromises, data breaches, operational disruptions, and other harmful events. Additionally, they must manage an organization's entire security infrastructure, ensuring its compliance with rapid policy changes. Meanwhile, inefficient processes, poor collaboration, or just a lack of buy-in from other teams can slow down the resolution of security alerts from an existing organizational toolset. Cloud adoption adds yet another stressor, as the attack surface of the organization increases and risk of cyber threats multiply.

These security challenges can be tackled with cross-domain, intent-based and declarative automation. Orchestral's Com- poser works to identify configuration drift, compliance, policy, and audit detection issues and remediates these threats within seconds instead of hours or days.

Infrastructure Challenges

- Time consuming firewall policy change management which inhibits critical access to important business data for power users within the organization

- Ineffective patch management leads to vulnerabilities of systems, software, and applications making them susceptible to cyber threats and compliance issues

- Repetitive Data Access tasks are time consuming and counter productive to high functioning business units

- Lack of business continuity due to policy changes occurring in one domain that do not translate effective change to the rest of the infrastructure which result in outages

- Challenges with multi-step, cross-domain processes between firewalls, ChatOps, self-service portals and application directories

- Lack of appropriately mapped approval processes that can be time-consuming or non-existent in certain circumstances

- Extended planned downtimes that are necessary for patching and system updates impact employee productivity

Use Case Solutions

- Enterprise Asset Vulnerability and Patch Management

- Security Infrastructure Compliance Management

- Event-Driven Security Policy Change Management

- Orchestration of Firewall Lifecycle Management

- Microsoft Active Directory Access and Identity Management

Infrastructure Insight and Management

As enterprises work towards empowering their employees and streamlining their working environment, the rapid addition of toolsets becomes common place. This often leads to disparate pieces of infrastructure spread across multiple siloed domains creating increased complexity. There is an ever-present need and desire to collaborate across siloed domains – such as virtualization, networking, ITSM, hybrid cloud, and security – into a seamless, well-maintained, fully- automated infrastructure.

The vision of an autonomous infrastructure consists of two key components. First, there must be infrastructure insight; requiring visibility and observability, which in turn, provide recommendations for action. This capability then enables management of the infrastructure to be implemented through event-driven actions and workflows. Second, once the infrastructure insight and management are in place, an enterprise can take the next step on the journey towards an autonomous infrastructure with intent based auto-remediation.

Orchestral's Composer lays the foundation and brings the vision of autonomous infrastructure into reality by providing the back end capabilities for an event-driven, cross-domain, user self provisioning portal. Enabling IT operations to autoremediate a wide variety of use cases.

Infrastructure Challenges

- Dedicated personnel spending hours auditing network device configurations to ensure they meet compliance standards

- Security threats are multiplied as out of compliance devices are more vulnerable to cyber threats

- Troubleshooting times are extensive due to the hours of manual effort spent identifying which network device has drifted and where the drift occurred in the configuration

- Risk of unplanned down-times and extensive outages

- Siloed teams requiring niche products which drive up total cost of ownership and business expenses

- Extensive difficulties getting to root cause forces organizations to assemble cross-domain subject matter experts into time consuming war rooms

- Siloed domains are inhibitors of creating a successful Center of Excellence

- Stifled business agility due to a lack of root-cause analysis and dynamic auto-remediation

Use Case Solutions

- Reduction of Downtime Through Dynamic Auto- Remediation with Root-Cause Analysis Supporting the Governance and Compliance Requirements of the Organization

- Enabling Self-Driven Automation Via User Self-Provisioning Portal

- Hybrid Cloud Resource Policy Provisioning

- VM Sprawl Management for Cloud and On-Prem Environments

- Keeping Networks Bloat Free with Network Configuration Drift Management

Executive Summary – Business Impact & Economic Value

The Automation Journey of an enterprise is a progressive series of steps that reduce the complexity of automation throughout the business and IT infrastructure. To answer this call of simplifying the complexity of automation, Orchestral.ai provides the Composer platform, a solution capable of cross-domain, event-driven orchestration. By focusing on reusability of both new workflows and existing enterprise specific scripts and automations, Orchestral aims to empower IT leaders with a tool capable of orchestrating not just single domain workflows, but workflows that span multiple domains and many use cases.

Virtualization Lifecycle Management, Network Automation and Orchestration, ITSM Automation and Orchestration, Hybrid Cloud Resource Optimization, IT Security Orchestration and Infrastructure Insight and Management are normally seen as siloed domains where individual automations need to be created and overseen within each domain. However, the Composer platform is here to break down these domain barriers in an effort to focus on cross-domain orchestration; tying together separate domain specific automations to bring forward holistic event-driven workflows. With the power of event-driven, cross-domain orchestration various benefits can be achieved throughout the IT Infrastructure:

- Faster time to value and reduced total cost of ownership
- Reduction and elimination of manual, time-consuming tasks
- Reduction in risk of costly errors and time wasting war rooms
- Streamlined provisioning and management of resources for any domain
- Easier, faster optimization of various virtual environments
- Built-in API connectivity to empower citizen developers with low-code/no-code capabilities to create powerful automations

Composer Benefits

- Enablement of downstream automation and orchestration by creating the foundational building blocks for a healthy, high functioning enterprise infrastructure

- Decreased mean time to resolution

- Maximize uptime through the avoidance of potential downtimes and critical business outages

- Increased competitive edge via cross-domain orchestration leading to business agility, creativity and flexibility

- Rapid time to value combined with a reduction in total cost of ownership

- Increased customer trust and satisfaction which impact customer retention and brand value

- Well documented process to verify and troubleshoot when necessary

- Repeatable automated process that can be executed locally or from an external orchestration system

Learn More with Orchestral.ai

At Orchestral.ai it is our goal to help companies along their automation journey and to focus on reducing the complexity of modern enterprise infrastructures. If you would like additional information on any of the above use cases, a demonstration, or to engage in a conversation around your businesses automation journey please send an email to sales@orchestral.ai or book a demo now with our team.

About Us

Orchestral's mission is to enable IT infrastructure & operations teams to more effectively manage the complex mission critical processes that their organizations depend upon for day-to-day operations. We accomplish this today with the Orchestral Platform - an integrated suite of automation, orchestration and Explainable Artificial Intelligence (XAI) technologies designed to empower enterprises to start their transition toward Autonomous IT Infrastructure.