

WHITE PAPER

Case Management: Three Adaptive Architectures for Dynamic Customer Support

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Three Adaptive Architectures for Dynamic Customer Support

Wired to the business and geared toward customer-centric outcomes, case management is a proven and effective method of facilitating dynamic support. Yet, while the enterprise has made clear leaps and bounds in terms of technological sophistication, the support structure is often playing catchup. Essential to support process workflows are volumes of data generated and shared that must be aggregated, secured, acted upon, tracked, and filed over the course of multiple customer-enterprise interactions. And this presents a significant risk to companies in that any lack of responsive customer support — either in systemic quality, availability, or capability — is a primary driver of customer churn.

Developing a best-in-class customer support system is pivotal to a strategy of retention. Dealing with complex global support processes can be met by building out a file transfer system that extends beyond automated system-centric workflows and application integration needs. A modernized support system should include secure file sharing for ad hoc people-centric file movement that provides collaborative functionality and delivers constant and immediate value to the customer.

The efficiency and effectiveness of the customer support system is contingent upon the ability of the enterprise to handle complex support file movement across a multi-enterprise global topography. Next-generation customer service tactics apply a case management solution as a way to ensure proficiency at every stage of customer support, from diagnosis to resolution.

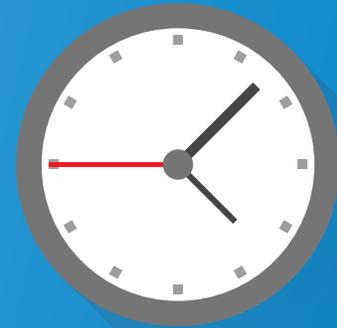
The modern enterprise support system requires far more than simply standing up an FTP server. The case management solution necessarily provides the ability to meet the evolving digital security requirements, increasing file sizes, and expansive regulatory mandates. Consequently, data movement scenarios for global support require a superior managed file transfer (MFT) system to facilitate the seamless and compliant flow of information, including large files, between the distributed customer base, internal applications, and the support team.

The State of Case Management Today

The case management methodology is a business framework that facilitates automated system-centric workflows, and ad hoc people-centric file movement in combination to address complex multi-tiered business processes in increasingly dynamic customer-facing support cases.

Building out a case management structure developed on the bedrock of an enterprise managed file transfer (MFT) system can help the enterprise achieve the seamless and secure flow of information to and from the customer.

MFT capabilities in a dynamic case management solution help the organization increase business agility, improve productivity, optimize case outcomes, and reduce the risk of customer attrition. When the enterprise is capable of securely facilitating real-time bi-directional data flows between the support system, the enterprise, and the customer, it can exceed customer expectations.



A Confluence of Forces

There are a number of forces reshaping the enterprise support ecosystem and case management systems that need to be examined.

The First Force: The Compliance Burden

Proprietary customer data is necessarily transferred, copied, stored, and handled throughout the support case lifecycle. Customer files inherently contain sensitive information, including personally identifiable information (PII), financial information, health data, or security and access details. Therefore, customers who are keenly aware of the risk of data compromise within the support structure (especially when working with third parties) specify contractual obligations that can include encryption requirements and stipulations around individual employee access, control, and activity logging.

Beyond customer-specific considerations, governmental or industry regulations are pertinent to the quality of the

enterprise support case management system. For instance, the European Court of Justice ruling that invalidated the US-EU Safe Harbor agreement in 2015 shows that organizational self-certification can no longer conform to EU Privacy regulations. The result, especially for organizations outside the EU, is a heightened sensitivity to the regulatory requirements of individual countries – necessitating a tightening of geographic restrictions around regional data residency. Without effective organizational security measures in place to ensure compliance when exchanging support data, the enterprise faces steep penalties for violations. Further, if sensitive customer data is leaked, this at minimum puts the organization's reputation risk, or at worse, could destroy the business.

As such, effective case management requires the seamless bi-directional and real-time flow of information between the customer and the support system without sacrificing enterprise control, or risking compliance violations when gathering files containing sensitive customer data.

The Second Force: Evolving Data Requirements

Global support solutions are v to gather information from customers as part of the support and diagnostics process. This information includes configuration files, logs, dump files, and other setup information, which allows the vendor's support team to identify, diagnose, and eventually resolve customer issues. But the data demands placed on enterprise support systems never remain static for long.

Emerging challenges related to ballooning file sizes and the complexity of multi-enterprise topographies are overburdening existing systems. Further, the need for compliance and informational sensitivity necessitate careful handling, particularly for organizations that have an international presence or a global customer base and are increasing the number of pressing data-related challenges, including:

- 1. File Size:** How do large files securely and reliably reach the support team across diverse geographies? How does the support team avoid time-consuming data transfers of large files to and from a cloud environment?
- 2. Protocol Support:** How do upload/download processes support multiple protocols or additional protocol requirements as the business expands?
- 3. Regulation:** How will the organization ensure increasingly sensitive regulatory compliance of individual countries where tight restrictions apply to specific geographic regions and data residency?
- 4. SLAs:** How will the enterprise mitigate the risk of compromise, protecting contractual trading partner requirements around data handling, access and control, residency, encryption, and activity logging?

The Third Force: Customer-Centric Values

This is a new customer-centric age where the balance of power is shifting away from the business: Customers have more control and are demanding more agency over the services and products they pay for. Most notably, as the

business side of the enterprise takes on more and more technical responsibilities, the tapering off of technological sophistication (compared to IT users) is leading to an increasing demand for ease of use. The burden of adapting products and services to be more customer-centric is falling on the provider's shoulders.

In this paradigm, the enterprise may experience greater challenges meeting rising expectations for an intuitive customer support experience. This growing challenge is magnified when the enterprise is missing essential technological capabilities necessary to the line-of-business (LOB) customer.

Establishing an effective case management support structure that includes an intuitive customer support portal is thereby key to limiting customer attrition. The portal, when providing ease of access, ease of use, an intuitive interface, and the digital equivalent of Iron Mountain security elevates measurable value in the case management system.

The Fourth Force: A New 24/7

When conceiving of a best-in-class system that can tackle the challenges of globalized support, companies must imagine a world in which the sun never sets – evolving from 24/7 to immediate and real time.

A follow-the-sun approach, where support issues continue unbounded by the workday or time zones, is the optimal standard in effectively handling support cases for a global business without falling short of rising customer expectations for immediacy.

With the follow-the-sun support model, business customers are no longer forced to wait for active support hours to see ticketing or issue diagnosis begin. Under these circumstances, anywhere, anytime is the new normal, and it is redefining the constitution of support provision. In this context, the enterprise must adopt a technology-based case management approach to facilitating “always on” customer interaction and support availability.



Applying an Adaptive Methodology to Support Case Handling

A multitude of support solutions and help desk systems exist — both on-premise and in the cloud — and all share the common characteristic that they allow either the customer or the support representative to open a support case, track the steps, and execute actions all the way through resolution. However, due to the forces of change, traditionally linear models applied to support case resolution no longer stand up to the demands of current and complex globalized case handling.

Support is an omnipresent component of the customer lifecycle, and case management is reshaping the systems of engagement that enable dynamic support for advanced global enterprises. The case management support system, while depending on advanced file transfer technology, functions to treat complex business processes as if they were cases — seamlessly interweaving automation with ad hoc workflows. The job of a case management solution for the enterprise

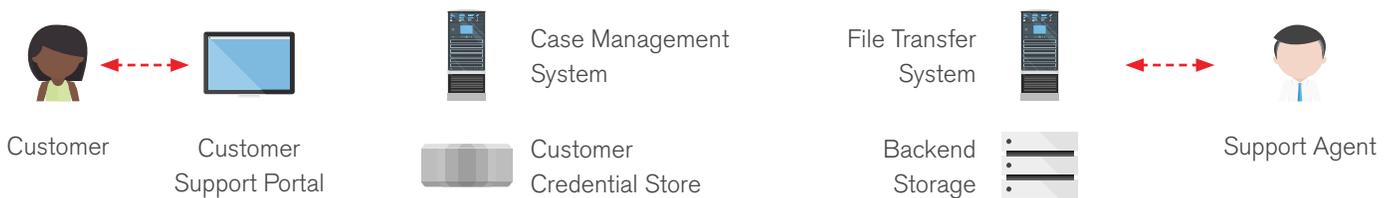
is to deliver great customer support in a modern environment. Therefore to replace uncertainty with agility by addressing the recent forces of change, including the challenges associated with contemporary data handling the business needs a modern file transfer tool to sit alongside the case management solution. The optimized case management solution (detailed in the following architectural options) must have the correct attributes in order to deliver the best architecture for the best customer support experience.

Additional MFT components such as API integration, file acceleration, and data management capabilities including access and location control, facilitate the seamless and compliant flow of sensitive information both to and from the customer in a timely and efficient manner, serving as an agile and flexible arm for complex issue resolution within the global support system.

Three Support Architectures for Dynamic Case Management

A Basic Architecture

Many smaller organizations work with this basic architecture, separating case management from the file transfer system in customer support. However, this presents acute challenges to global organizations where the compromises associated with the following simplified infrastructure become unacceptable.

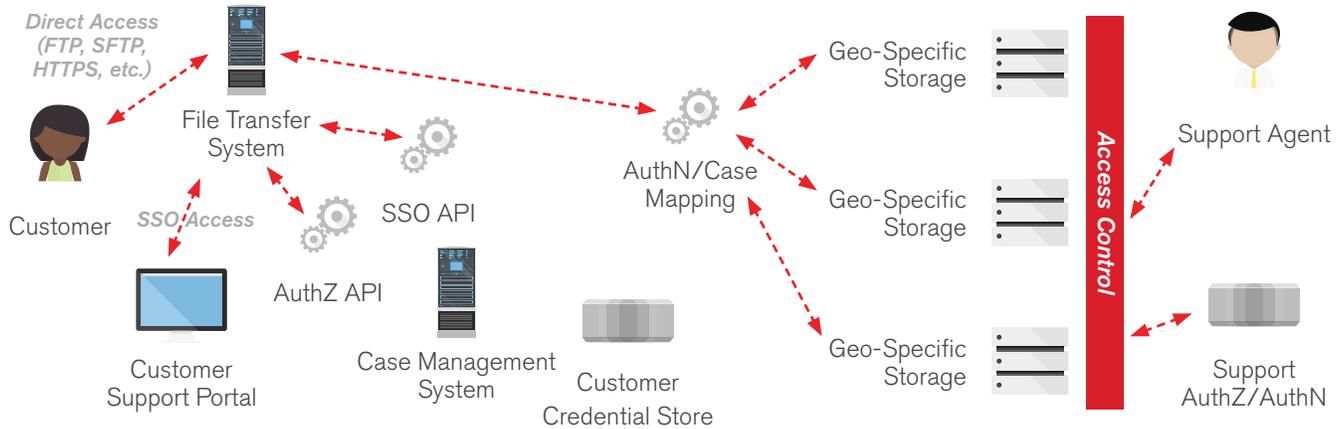


Components	Limitations
<p>Case Management System: Incorporated MFT solutioning that provides the company with the capacity to support synchronous workflows and ad hoc processes within the open-to-close customer issue resolution system.</p> <p>Customer Support Portal: A self-service web portal — with authentication and access control — allows customers to directly open cases and track the status of their cases.</p> <p>Managed File Transfer System: The means by which files can be securely transferred between customers and the organization's support group.</p> <p>Backend Storage: The files are streamed through to local infrastructure, allowing files to be stored internally on a redundant and managed corporate data storage infrastructure.</p>	<ol style="list-style-type: none"> 1. Authentication: With a separation between the case management and file transfer system, customers are required to maintain separate credentials, or the support team must issue temporary credentials to the file transfer environment. 2. Compliance: Without the geographic separation of data storage environments, there is no way to meet data residency and region-specific regulations. 3. Exposure: A loose association between cases and the case files can lead to files being lost, wrongly associated, or at worst, inadvertently exposed. 4. Access: Unauthorized access is a possibility due to a lack of protection or access control on the backend data store. 5. Sensitivity: There is no provision for removal or redaction of highly regulated customer data, or data containing highly classified or security-related information. 6. Slow Resolution: Backend storage requires data to be located and pulled remotely, failing to support a follow-the-sun structure.

Three Support Architectures for Dynamic Case Management

B Reference Architecture

A more integrated and dynamic case management solution introduces additional MFT components and system integration requirements to address the standard regulatory and efficiency limitations of the basic architecture.



MFT Components

Authorization API: Present and consume APIs to streamline the process of authentication, allowing common credentials to be shared across the dynamic case management system, the portal, and the MFT solution.

SSO API: Provide a seamless user experience with true single sign-on between the web-based portal and embedded file transfer system. The complexity of implementation may increase slightly; however, this method significantly enhances the overall coherency of the support solution.

Customer Credential Store: The customer credential store is optionally owned by the dynamic case management system (and accessible through APIs) or stays external to both the file transfer and support systems while retaining availability to both.

Communications Protocol Store: Include file acceleration, and support for protocols other than SFTP, FTP, or HTTPS for file transfer to and from the endpoints as these protocols can introduce significant delay in transferring and integrating large files particularly when transferring data across geographies.

MFT-Based Authorization and Case Mapping

MFT Case Mapping: Present a customer-specific and case-contextual folder structure (upload/download directory and sub-directories) with a consistent experience and intuitive interface. Provide additional support for automated integration to backend systems regardless of case complexity or volume requirements.

Per-case Folder Structure: Discover open cases via APIs or other lookup means, assign a folder or structure, and present the case folder to the user on login.

Per-customer Simple Folder Structure: Assign location routing to determine regional-specific customer storage mapping. An API or lookup table allows the MFT solution to determine routing on login.

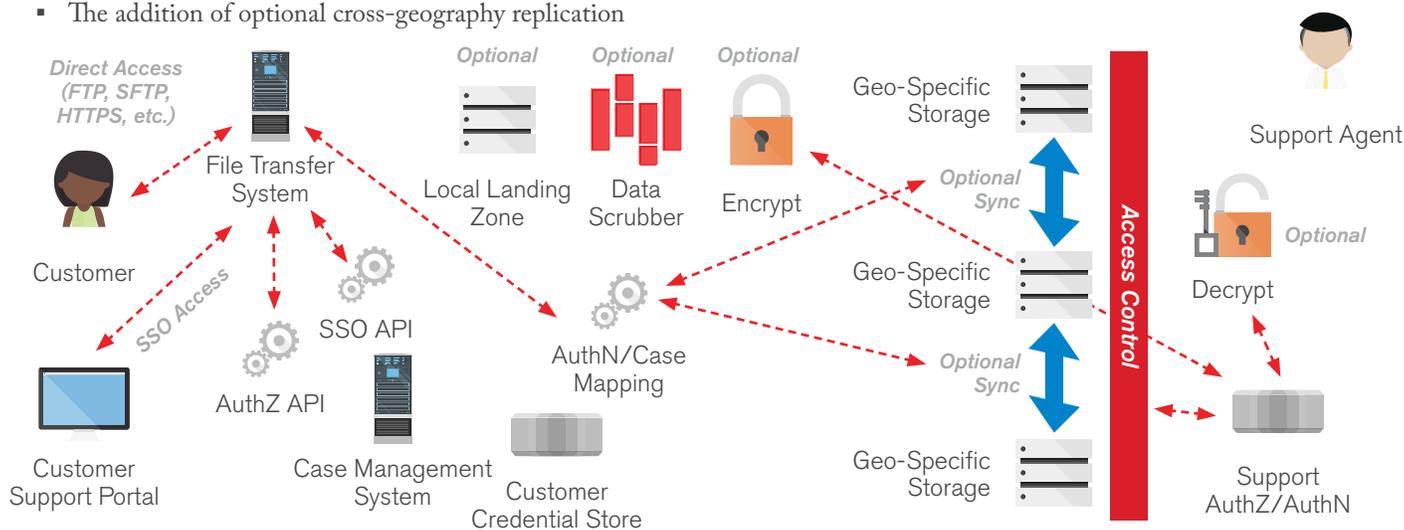
Storage Access Control: Available via Windows share and Active Directory security groups, auto-provision directory folders with appropriate location-based user access and clearance-level control for customers and the support organization.

Three Support Architectures for Dynamic Case Management

C Gold-Standard Architecture

There are a range of secure MFT enhancements that should be taken into account when designing a dynamic case management architecture for customer support. The Gold Standard architecture extends the previous architectures in myriad ways:

- The addition of a local landing zone and data scrubber
- The addition of Encryption/Decryption as support files are written to and read from disk
- The addition of optional cross-geography replication



Components

Local Landing Zone and Data Scrubber: Exposing data to the support engineer without compromising the ability of the support team to resolve issues requires precision. Ensure that sensitive PII and security-related data such as private key material is removed from log and configuration files before they land in the assigned access location.

Storage Encryption: Add protection from exposure to administrators on the storage infrastructure and others with on-disk encryption at all times, and controlled administrative access to the support authentication and authorization infrastructure without the adoption of a public key infrastructure (PKI) to issue and manage keys and certificates.

Storage Replication: Significantly speed up the ability to resolve cases where large support files are involved together with follow-the-sun support and the ability to rapidly bring the support files close in network terms to the support engineers working the case.

Considerations

Landing Zone: In order to implement a data scrubber, it may also be necessary to temporarily land content in a local zone to perform the scrubbing and to provide easy access to the content directly from the data scrubber.

Compliance: Geo-specific data residency considerations must be taken into account, as placing files in the local zone adds the potential risk of customer and regulatory non-compliance.

Geo-specificity: Customers or regulations may mandate that support data stay in a specific geography. The key design aspect for this component is the control of what data should be replicated and what should not.

Recommendations

Optimizable support — from diagnosis to resolution — obviously remains a business imperative. To the enterprise, realizing a fully-optimized customer support system is paramount to winning in the marketplace. After all, the efficacy of support case resolution is key to competitive differentiation. So, case management is no longer a tactical strategy confined to industry-specific boundaries. Instead, applying the case management framework to dynamic customer support and help desk workflows gives the enterprise a potent methodology that blazes a new trail to agility even in the face of unpredictable and dynamic processes involving customer-specific, yet global interactions.

Smart organizations are in the process of assembling a next-generation case management architecture built on the backbone of a managed file transfer technology. Properly conceived, the MFT component of the dynamic case management solution not only works to ensure compliance, but can help choreograph the dynamic business processes involving automated system-centric workflows, and ad hoc file movement, allowing the support teams and the geo-distributed customer base to easily and securely transfer files of any size, format, or protocol support requirement.

Consider the following attributes of a highly advanced MFT platform:

- **Protocol Support:** Provide extensive file transfer capabilities with a vast array of high-frequency and industry-specific communications protocols support for highly differentiated systemic and compliance requirements.
- **File Acceleration:** Single-platform availability of file acceleration technology that speeds the transfer of large support files regardless of network conditions for faster engineer processing and delivery outcomes.
- **Integration:** Automate systemic integration into vital backend applications and storage routing for synchronous transfers, including ad hoc file transfers.

- **Hybrid Integration:** Facilitate ground-to-cloud (and back again) file transfer to and from customer and support cloud applications and storage.
- **Visibility:** Enhance SLA compliance with clear administrative dashboards for IT and business visibility, and activity tracking across the full case management solution.
- **Regulatory Compliance:** Ensure end-to-end data security, format, storage, encryption, and access measures necessary to meet customer and regulatory compliance mandates applicable to the transfer of PII including NAIC, HIPAA/HITECH, IAS/IFRS, Basel II, Sarbanes Oxley Act (SOX), Solvency II, BSA/AML, SAP, MiFID, SEPA, ISO/IEC 27000 series, and the EU Data Protection Directive.
- **Access Control:** Front-end user identity management and access control that can be easily shared with other applications within the case management architecture.
- **Interoperability:** Seamless interoperability with existing systems and applications, and that extends integration to optional gold-standard case management components, including the data scrubber and landing zone.

Enterprises endeavor to encapsulate the greatest range of customer-specific requirements and top-tier functionality necessary for a fully realized global case management solution and support framework. Achieving superior support case handling of unstructured, undetermined, and unpredictable process workflows globally is an outcome of consummate managed file transfer technology and case management solutioning. Ultimately, employing a dynamic case management methodology is only feasible with flexible file transfer technology that provisions streamlined systematic and ad hoc file movement capabilities on both sides of the enterprise fence across the entire support ecosystem.

About the Author



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Vice President, Solutions

Dave Brunswick leads Cleo's pre-sales and solution support for North America. He brings more than 25 years of experience in managed file transfer technology with a deep knowledge of technical sales, pre-sales, technology strategy, engineering, product management, and product development.

In previous positions, Dave has held senior consulting and architecture roles throughout the managed file transfer software market, serving as a senior technology leader and solutions architect at Axway and Tumbleweed Communications. He also has led systems research and development teams for a range of government, manufacturing, and transportation organizations matching customer business goals with innovative data integration solutions. He holds an M.A. in Mathematics from Oxford University.

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