Custom Application Support

Synoptek

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Introduction

This Service Definition is subject to all terms and conditions of the Service Order to which it was attached. This Service Definition describes and contains additional terms that apply to Synoptek's Custom Application Support (The Service).

The service definitions found herein reflect Synoptek standards at the time the Service Order(s) was issued. Synoptek reserves the right to change any particular standard herein to reflect Synoptek's best practices or industry standards at its sole discretion with or without notice.

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Service Offerings

Synoptek's Custom Application Support provides you with fully managed application services for in-house or Customer-facing applications. Our goal is to help Customer's realize the return on investment from their application development efforts and deliver a high quality experience to end users. We know that getting to market fast is just one of your many goals. We understand that sustaining a competitive advantage requires a consistent-edge for compelling features and capabilities, a uniquely designed user experience, and high quality to avoid unnecessary churn.

Synoptek's team of cross-functional resources trained in modern software development lifecycle (SDLC) models such as agile/SCRUM, but also traditional ones such as waterfall to deliver on the Synoptek promise: to be your trusted advisor and last technology partner for all things application development.

Synoptek delivers this service with a DevOps methodology, avoiding typical challenges faced in traditional product development, such as:

- Inefficient collaboration between development and operations
- High dependency on specific individuals for progress
- Deployments taking longer than desired
- Human error (e.g., manual code deployment) resulting in production errors
- Cumbersome testing processes
- Lack of automation
- Unavailability of environments
- Increased cost and overhead to execute
- Inconsistent environments
- Ineffective production monitoring

At a glance, Synoptek's Service include:

- SCRUM Team Services to deliver cross functional expertise across software engineer, UI/UX, Quality Assurance, Product Management, and SCRUM methodologies
- Developer (Dev) Services to resolve defects, enhance new features, develop user interfaces, and maintain the CI/CD (Continuous Integration/Delivery) pipeline and adhere to a high code quality standard
- Production (Ops) Services to resolve post-deployment issues and escalations 24x7x365 Tier 1 administrative and end user to Tier 3 (developer resolvable defects).

APPLICATION SUPPORT SERVICES

"Application" is a very broad term. Synoptek supports the following types of applications:

Feature	Description	Included
MOBILE APPLICATIONS	Synoptek will support mobile app platforms including (but not limited to) Apple iOS and Android.	Yes
WEB APPLICATIONS & WEBSITES	Synoptek will support web applications delivery models including (but not limited to) SaaS, PaaS, IaaS.	Yes
DESKTOP APPLICATIONS	Synoptek will support desktop application delivery models including (but not limited to) client/server, middleware, standalone backend, frontend	Yes
INTERNET OF THINGS (IOT)	Synoptek will support IoT platforms including (but limited to) Hitachi IoT.	Yes
APPLICATION PROGRAMMING INTERFACES	Synoptek will support API's including (but not limited to), integration API's, business process API's, or API-only products.	Yes
APPLICATION INTEGRATIONS	Synoptek will support application integrations that connect 3rd party (such as ERP, CRM, Unified Communications (UC), ITSM, etc) or custom developed applications.	Yes

DEVELOPER (DEV) SERVICES

This service provides Customers with experienced developers committed to supporting the Customer's application support needs during development/pre-production

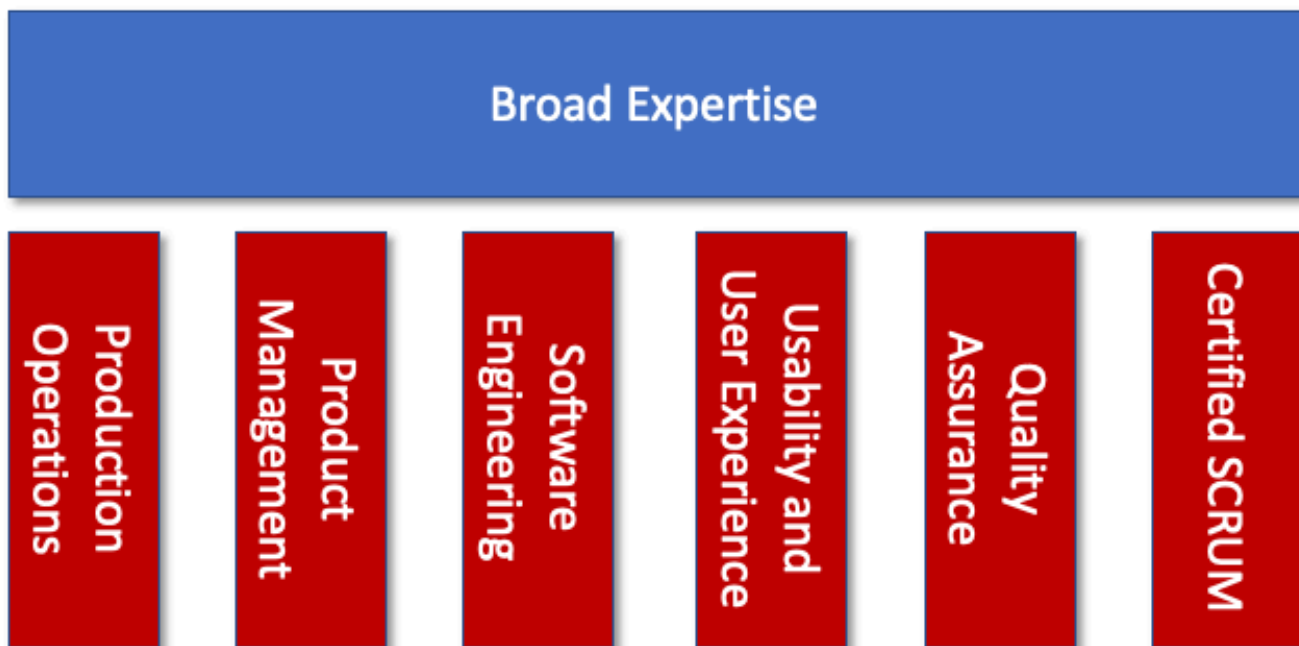| Feature	Description	Included
DEFECT AND FEATURE ENHANCEMENT TRIAGE AND RESOLUTION	Synoptek developers provide defect, feature and UI/UX enhancement, and project tracking in an agile management application for Customer's to submit requests (i.e., tickets) Ticket types supported in this service include: • Defects in the product • Feature enhancement requests • UI/UX enhancement requests Synoptek provides resolution to all Customer requested bugs/defects and feature, UI/UX enhancements.	Yes
VERSION CONTROL	Synoptek developers will manage a source code repository for version control in one of two ways : 1) Onboard the Customer's existing source code repository 2) Implement its preferred source code repository solution. This solution will be an industry-standard tool and be used to manage/document changes to the product's code throughout the service's engagement.	Yes
CONTINUOUS IMPROVEMENT	Synoptek will regularly improve the developer team's ability to execute. This process involves root cause trend analysis of defects and performing retrospectives every sprint or release to identify process improvements, causes of blockers with the goal to improve team velocity (i.e., amount of work that can be taken on each sprint/release).	Yes

	Synoptek will regularly assess tools that will improve efficiency that the Customer may want to onboard (these tools are documented in the Appendix.) Synoptek development team will advise your Client Advisor about proposing new solutions to help plan a roadmap.	
CONTINUOUS INTEGRATION & CONTINUOUS DEPLOYMENT (CI/CD)	Synoptek developers will work with product owners (PO's to define a product release cadence, for example, every day, week, month, quarter, or annual. Synoptek will deliver product updates using continuous integration and deployment techniques to ensure the Customer's application is addressing business requirements on a consistent delivery timeline. This includes automated regression testing that core functionality works as expected. Synoptek will manage continuous integration platforms, for example (Jenkins, Docker). If the application is cloud native, then Synoptek will also manage container orchestration platforms, for example: (Docker, various Kubernetes distributions and Managed Kubernetes Services on AWS/Azure). The choice of CI/CD tools will be discussed with the Customer during onboarding and regularly assessed throughout the managed services.	Yes
CODE QUALITY	For the portion of source code Synoptek is responsible for, and if technically feasible, Synoptek will perform code quality that the PO/Customer can prioritize (non-exhaustive list): • Algorithm performance (O-notation) • Pay down of technical debt • Refactoring	Yes

	Work performed beyond the number of contracted hours will be considered overage and is billable.	

SCRUM TEAM SERVICES

Synoptek offers services that deliver experienced resources in cross-functional SCRUM disciplines. These resources work with developers in building the product to a high standard across a variety of functions.

Synoptek elects a "T-Shaped" skills strategy to leverage cross functionally trained resources who specialize in one major SCRUM discipline, but can flexibly deliver any of the following SCRUM team services as the need arises:

Feature	Description	Included
PRODUCT, RELEASE, AND SPRINT PLANNING	Synoptek will conduct product planning that involves : 1) Planning before each major release 2) Ongoing sprint planning (2 to 4 week increments) All planning is conducted with all members of the SCRUM team.	Yes

	Release planning focuses on identifying features are targeted for the upcoming and future releases. Sprint planning focuses on estimation of effort for work to be performed, and prioritization of individual team member work.	
BUSINESS ANALYST (BA)	Synoptek BA's write the user stories for each user persona for any requested feature enhancements, excluding defects, or technical debt work. User stories describe the software feature in an informal, natural language way to show the perspective of the end user or customer. Each user story also contains: • Acceptance Criteria – what the product most do before the Product Owner can accept it as complete • Definition of Done – all requirements that must be met for a user story to be considered complete Example user stories and acceptance criteria can be found in the Appendix.	Yes
PRODUCT OWNER (PO)	Synoptek will allow either the Customer to be the PO or assign one of PO-certified Synoptek's analysts to be the PO. The PO is responsible for prioritizing the backlog of defects, feature enhancements, and/or user stories.	Yes
QUALITY ASSURANCE (QA)	Synoptek QA analysts will design a test plan that will meet the acceptance criteria of each user story, which includes: • Functional testing • Regression testing	Yes

	The PO is responsible for performing a User Acceptance Test (UAT) to ensure all feature enhancements, defect resolution, and quality metrics are met. An example of a UAT can be found in the Appendix.	
USER INTERFACE/USER EXPERIENCE (UI/UX)	Synoptek UI/UX analysts will design wireframes/mockups, produce HTML/CSS styles, and conduct usability testing for user stories with that require human interaction with the product.	Optional
SCRUM MASTER (SM)	If utilizing a SCRUM/Agile development model, Synoptek SM's will drive the SCRUM process cross functionally, and are responsible for running the daily stand-up, a 15 minute meeting to bring SCRUM team members up-to-date on vital need-to-know information for coordination, as well as to unblock impediments, blockers, or issues affecting the team from moving forward. SCRUM masters are servant leaders and are not expected to take team member status. They serve to augment the team's velocity.	Optional

PRODUCTION (OPS) SERVICES

This set of services provides customers with a custom managed application once it is in production and is responsible for application managed support.

Feature	Description	Included
INCIDENT TRIAGE AND RESOLUTION	Synoptek provides incident tracking in an IT Service Management (ITSM) application for Tier 2 & 3 support and resolution to Tier 2 & 3 incidents for data warehouses. Synoptek uses a priority queue system to resolve these incidents. Synoptek proactively reviews open incidents with Customer's and Customer's are expected to prioritize which to solve first.	Yes

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	Tier 2 support is called upon when a break in the expected behavior of a custom application is discovered, but a workaround exists to resolve the problem. Remediation is not always required.	
	Tier 3 support is called upon when a break in the expected behavior of a custom application is discovered, and remediation is required to resolve the problem.	
	Regardless of severity, Synoptek will attempt to use all available internal and 3rd party vendor resources to resolve the problem.	
24X7 STAFFED ADMIN/IT SERVICE W/ CASE TRACKING AND REPORTING	Synoptek provides an SLA-backed 24x7 service desk for Tier 1 support requests, resolution to Tier 1 incidents, and problem management to customer technical contacts and authorized technical team members relative to subscribed tools and services. Tier 1 support for custom applications delivers a 24x7 SLA backed triage of critical and non-critical incidents and communication to appropriate escalation resources as necessary, raising attention to avoid business impact. This level of support is also used for servicing 24x7 administrative requests – for example, questions about a use case for the application and other day-to-day administrative challenges not requiring escalation.	Optional – See Service Desk
USER ACCESS PROVISIONING	Synoptek will provision users into access roles as requested by the Customer. These roles can be for administrative or end user needs.	Yes
APPLICATION MONITORING	Synoptek will monitor resource utilization for standard application services connected to the custom application like databases, web application servers, etc if hosted in an infrastructure cloud where Synoptek call install monitoring software or virtual machines.	Optional – See Application Monitoring

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MANAGED INFRASTRUCTURE AND CLOUD PLATFORM	Synoptek will manage the underlying cloud infrastructure or platform where the application is hosted for an additional service fee. Examples include management of Azure or AWS virtual machines or app platform services.	Optional – See ITaaS and Managed Cloud
DATABASE MANAGEMENT (SQL SERVER)	Synoptek's will manage SQL Server databases with 24x7 monitoring, remediation, and general maintenance for mission critical and general purpose SQL Server database instances.	Optional - See SQL Server Definition

Service Deployment

Synoptek is responsible for the onboarding of customers into the Custom Application Support service. Synoptek follows a process to assess the current application, implement the future state vision, and manage the go-forward solution.

ASSESSMENTS CONDUCTED DURING ONBOARDING

Depending on the level of maturity of the development environment, and as understood during the discovery process and/or what is requested by the Customer, Synoptek will:

- Recommend a DevOps maturity assessment of the current source code, process, culture, tools, and supporting IT infrastructure.

- Discuss a range of suitable DevOps implementation models and estimate cost-to-deliver and manage.

- If Synoptek agreed to be the PO, stakeholder analysis, learn the app, the business process the app supports, its users, and its business goals.

- An application architectural review to learn and document the architecture and its integration points

IMPLEMENTATIONS CONDUCTED DURING ONBOARDING

- MVP training of the application, code, technology stack and supporting platforms, as well as ongoing training post implementation

- Selection and building of the CI/CD tools & pipeline (if needed)

- Deployment process and release orchestration

- Onboarding of any existing app's managed IT infrastructure, platform, or application monitoring operations to Synoptek if subscribed to Synoptek IT or Cloud managed services

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Service Expectations

SYNOPTEK RESPONSIBILITIES

Synoptek is responsible for maintenance, enhancement, delivery, and production operations for the application and/or subsequent application releases during the managed services subscription period.

If contracted, Synoptek can manage the IT and Cloud infrastructure or platform(s) hosting the application with additional Managed services from Synoptek.

CUSTOMER RESPONSIBILITIES

Synoptek expects Customers to be the most knowledgeable on their business needs and recommend they assign a Product Owner to work the Synoptek SCRUM team. Optionally, Synoptek can assign a Product Owner, given sufficient knowledge and/or training of the application, its users, and the business process it supports.

We expect to fulfill many Customer's DevOps process, tools, and culture needs using Synoptek's supported DevOps Toolchain technologies (see Appendix). However, tools and platforms preferred by the customer that do not fall under this compatibility list must be reviewed and agreed upon by both Synoptek and the Customer prior to any signed contracts or agreements.

Customer must provide the licensing and subscriptions for Synoptek recommended and provisioned products.

Service Limitations

Synoptek will not deliver a named resource except for opportunities of a minimum size (i.e., a minimum # of hours recurring). All SCRUM team members deliver services as are part of a shared resource. This can be discussed with Synoptek Business Development Managers (BDM's) or Client Advisors (CA's).

Synoptek's defect triage and resolution services do not include a defined SLA. Instead, the product owner is expected to make decisions to prioritize defects over feature enhancement or other development. However, Synoptek IT and Cloud Managed Services do have Service Level Objects (SLO's) and Guarantees (SLG's) as described in other Service Definitions.

Appendix

SUPPORTED DEVOPS TOOLCHAIN TECHNOLOGIES

If Synoptek will be deploying new DevOps tools to support the Custom Application, Synoptek can support some or all of the following tools/platforms below. Customer must provide the licensing and subscriptions for these products.

Version Control	Git/GitHub, Subversion
Continuous Integration	Jenkins, Docker
Test Automation	Maven, Apache JMeter, Junit, Selenium
Continuous Deployment	Chef, Ansible, Puppet
Monitoring	Nagios, Datadog
Orchestration	Kubernetes, Terraform, Azure Kubernetes Service (AKS)

USER STORY AND ACCEPTANCE CRITERIA EXAMPLES

ID	User Story	Description

##### 	
 	
 LISTING
	As a user, I should be able to upload invoice remittance file in the cash application.	1. When user accesses the cash application, user should be able to upload the remittance file to proceed to make the payment.
		 2. The remittance file can be in form of Excel or CSV.
		 3. The uploaded file will be in following format;
		    ○ PRO
		       ▪ Pro number of the shipment against which the payment is to be made
		       ▪ This is a mandatory field for the remittance file
		    ○ Payment Date
		       ▪ Date of the payment
		       ▪ This is a mandatory field
		       ▪ The format of the date can be MMDDYYYY, MMDDYY, MM-DD-YYYY, MM-DD-YY
		    ○ Check Date
		       ▪ Date when the check was issued
		       ▪ This is a mandatory field

- The format of the date can be MMDDYYYY, MMDDYY, MM-DD-YYYY, MM-DD-YY
  - o Amount Received
    - The total amount received for the pro number
    - This will be numeric value.
    - No text value allowed. If user enters the text value, TMS will not parse it
  - o Payment Method
    - The method of payment
    - This is mandatory field
    - Allowed values - Printed Check, Online ACH Debit. Cash, EFT, Credit Card, Online Charge Card
    - The values should strictly be any of the above.
    - If the value is anything other than mentioned above, TMS will consider check by default
  - o Check Number
    - The main reference number for the payment
    - this is mandatory field
    - Value can be alpha number
    - Maximum allowed length should be 55 character

4. When the file is uploaded on an empty screen, with the record available in the file, TMS will create a DRAFT batch.
5. At any point of time, TMS should not ignore any of the record from the file. Even if there are invalid values, TMS should show the record in the listing. This way, accounting team can ensure nothing is missing.
6. Once the file is uploaded, TMS does not need to preserve the file.
7. Once the file is uploaded successfully, user should be notified on the screen.
8. If cash application has a draft available and user uploads the file, the records available in the file should be appended to the existing records in the listing grid.
9. If there are duplicate records in the file, TMS will still show duplicate entries in the listing.
10. Validations to be performed while uploading the file;
    - o Duplicate items in list
      - Cash application will identify if the duplicate items are available in the list.
      - To identify the duplicate entries, TMS will consider check number and shipment combination. So same shipment and same check number should not be found twice in the uploaded list.
      - For this type of error – error message "Duplicate PRO found in the uploaded file."
    - o Multiple payment date or method found against one check number

- If same check number in the uploaded file have different check date, receive date or payment method, cash application will not allow user to upload the file
- Error message – "Inconsistent data found in uploaded file for check# <check #>"
- Invalid date
  - If there is any invalid date in the uploaded file other than supported format, cash application will not allow user to upload the file
  - Error message – "Invalid date found in uploaded file."
11. When the file is uploaded again, below will be the behaviour of the TMS
- Confirmation message should be shown to the user.
  - Message - Are you sure you want to upload the file and overwrite the duplicate PRO numbers with same check#? New PRO will be appended to the list.
  - Yes - Continue and allow user to upload the file
  - No - Cancel the process and do nothing
- If user continues and uploads the file, TMS should check the duplicate entries based on the PRO number and CHECK# number. If there are any existing entries with same PRO and Check# found, TMS will overwrite the entry.
- When entry is overwritten, all the existing changes to entries will be lost. These changes will contain the exclude list of duplicate invoice, applied credit, changes made to amount applied and amount received field.
- In a nutshell, it will completely remove the last change and add a new entry.
- Maintain audit entry for this case for troubleshooting later on.

Additional Scenarios –

1. Duplication check on file re-upload
2. If a shipment has more than one invoices created for the customer, when the payment file is uploaded on the cash application, TMS will bring up all the invoices on the screen for user to select which invoice he wants to pay.
3. The non-payment invoice can be deleted from the screen by user. We can highlight duplicate entries on the screen if needed. All these duplicate invoices found from TMS will have same amount received, amount applied and overpayment values in the listing since TMS does not know against which line item the payment needs to be made. User will have to adjust these duplicate invoices manually.
4. TMS should not auto-correct and update any of these invoices.
5. The check total, total amount applied and total over payment should include all the amount from the group including duplicate entries.

<table>
<tr><td></td><td></td><td>
6. Based on user correction, total amount on check group header should be updated runtime.

Impact on other modules –

1. None at the moment. To be verified during the development.

Acceptance Criteria –

1. Workflows mentioned in the statement of worked should be developed
2. All the data and user interface validations should be in place for uploaded file as per the statement of work
3. File upload performance should be optimum. Maximum records envisioned are 500.
4. Verify if the additional features of the TMS gets any impact due to this.
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QA TEST PLAN EXAMPLES

Test Case Description	Pre-condition(s)	Test Steps	Test Data	Expected Results	Actual Results	Status
To verify that user should be able to upload remittance file from cash application screen	- Cash App screen must be running	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload required file	Remittance XLS file as per required format and data	Specific file should be uploaded, and user must notified with required confirmation message	Its showing red toaster while uploading some files It shows amount received as twice than uploaded in file	**Failed**
To verify that user should able upload xls file type only	- Cash App screen must be running	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload required file	Remittance XLS file as per required format and data	User should be able to upload only XLS File type and validate if any other file type is uploaded	It's not validate for CSV file type	**Failed**
To verify that payment and check date format should be MMDDYYYY, MMDDYY, MM-DD-YYYY or MM-DD-YY in the all	- Cash App screen must be running	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload required file	Remittance XLS file as per required format and data	It should not allow to upload file other than given format and shows message as "Invalid date found in uploaded file."	It's not uploading file with required date format	**Failed**

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date fields in the remittance file		with all given date format			
To check that Amount Received field should accept numeric value only	- Cash App screen must be running	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload required file with numeric and non-numeric value	Remittance XLS file as per required format and data	It should only upload the file if it has numeric value in the amount received field	As Expected	**Passed**
To verify that Payment Method should be available as Printed Check, Online ACH Debit, Cash, EFT, Credit Card or Online Charge Card in file	- Cash App screen must be running	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload required file with given payment method	Remittance XLS file as per required format and data	It should only allow to upload file with given payment method and not with another name	As Expected	**Passed**
To verify that Check Number field Value should be alpha numeric with Maximum length is 55 character or not	- Cash App screen must be running	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload required file with given check number	Remittance XLS file as per required format and data	It should only allow to upload file with check number as alpha numeric with Maximum length is 55 character	As Expected	**Passed**
To verify that PRO, Payment Date, Check Date, Payment Method and Check Number field should be mandatory while uploading file	- Cash App screen must be running	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload file with and without required fields	Remittance XLS file as per required format and data	User should validate if remittance file is uploaded without given mandatory fields	It allows to upload file with blank mandatory fields	**Failed**

To verify that TMS should create a DRAFT batch when the file is uploaded on an empty Cash Application screen	- Cash App screen must be running - Cash App must be empty	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload required file	Remittance XLS file as per required format and data	It should create a draft batch when user upload first file	As Expected	**Passed**
To verify that it should upload all the record in the cash application listing with the invalid input as well	- Cash App screen must be running	1. Login to TMS and Move to Cash App screen 2. Click at Upload button 3. Browse and upload required file with invalid inputs	Remittance XLS file as per required format and data	It should upload file with all the invalid input as well	As Expected	**Passed**