Computer Guidance Managed Hosting Cloud Services
Implementation Guide

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Table of Contents

Introduction

Congratulations! Your company has made a smart decision to take advantage of CGC's Managed Hosted Cloud Services. This document will take you through the key phases of your migration journey and will provide you with pertinent information to ensure a successful migration or Go-Live, allowing you to take full advantage of our cloud solution and services offerings.

What is Hosted eCMS?

Hosted eCMS is delivered in a cloud computing environment. You access and operate the feature-rich, fully integrated construction management software over the Internet through a highly secure Web portal. Further, your Hosted eCMS ERP is supported by Computer Guidance's Disaster Recovery solutions and associated managed hosting services. You no longer need to possess, manage or maintain a physical server at your location. Your eCMS ERP solution is located at a Tier III SOC compliant data center managed by Computer Guidance Corporation, and you no longer need to perform updates or upgrades to your physical server, eCMS infrastructure or eCMS software applications.

What is CGC Managed Hosted Cloud Services?

Hosted eCMS and associated Disaster Recovery services provide you with a wide array of flexibility, so you can shift your focus toward what is most important to you—your construction business. With Cloud Hosted eCMS, you can sustain profitability, mitigate risks and increase efficiency. From solution hosting to backup, system failover, and redundancy, our managed services become an essential part of your business continuity strategy. Therefore, we ensure that your business-critical applications and data are always available, anytime and anywhere.

CGC's Managed Hosted Cloud Services include:

- Managed hosting services with guaranteed uptime and performance standards
- Backups, OS and software updates
- Disaster Recovery and Business Continuity solutions
- Cloud solutions, managed hosting services and SaaS data centers that are SAS70/SSAE16/SOC Type II Audit compliant
- Industry Certifications and Compliances
- Tier III Data Centers and Services
- Subscription-based business model with payments spread over time
- Centralized and virtually invisible product upgrades and new solution implementations
- Comprehensive and Advanced Security Configurations and Administration
- Cloud, Managed Hosting Services, and Disaster Recovery and Business Continuity Solutions

What is CGC Disaster Recovery Solutions?

Computer Guidance's Disaster Recovery Solutions ensure that your company's most valuable asset, its data, is safe and secure in the event of an emergency. Utilizing a state-of-the-art, Tier III SAS 70 Type II compliant data center as the backbone of the Disaster Recovery offering, the application protects you against prolonged downtime and data loss. The CGC Technical Services team first reviews your situation, infrastructure and system, and will work on resolving your issues immediately. If your system and/or infrastructure cannot be fixed, our Technical Services team will manually work on restoring your system, processes and data.

The Recovery Time Objective (RTO) for hosted disaster recovery services is 6 hours to relocate the customer's services to their Disaster Recovery system, located at an opposing data center. The Recovery Point Objective (RPO) for hosting services is 5 minutes for eCMS operational data and 24 hours for Windows-based reporting and support applications.

Hosted eCMS customers receive the Disaster Recovery solution at no additional cost while Computer Guidance's on-premise eCMS customers can subscribe to this invaluable solution in a cost-effective way.

Common Hosted and CGC Terms

VPN Tunnel – A VPN tunnel is a private pathway for data to pass through the Internet. A VPN tunnel insulates and encapsulates Internet traffic—usually with some type of encryption—to create a private tunnel of data as it flows through a network. A VPN tunnel is established between your network infrastructure and your eCMS database residing in a highly secure data center.

VPN Connection – A VPN, or Virtual Private Network, allows you to create a secure connection to another network over the Internet. You will be connecting to your eCMS environment through a highly secure VPN connection.

Test Environment – A testing environment is a setup and configuration of your eCMS environment, applications and data for you to work with and execute testing. Test environments are highly recommended prior to moving any update, upgrade or custom program to live production environments.

Production Environment – Production environment is a term used mostly by developers to describe the setting where software and other products are actually put into operation for their intended use by end customers. In other words, this is your live eCMS environment where all of your data, functions and applications operate. This environment is backed up on a regular schedule for continuity and security.

Hosted Implementation Environment – This is the Test Environment that will become your Production Environment once your hosted migration or implementation is fully complete.

Hosted Maintenance Window – The Hosted Maintenance Window is a period of time designated in advance by CGC's Technical Services team, during which preventive maintenance that could cause disruption of service may be performed.

SSL Internet Access – Secure Socket Layer certificates create an encrypted connection and establish trust for data access and exchange. One of the most important components of online business operations is creating a trusted environment where you feel confident that your data and functions are secure and protected. SSL certificates create a foundation of trust by establishing a secure connection.

OBDC Connection to Hosted eCMS Database – Open Database Connectivity (ODBC) is a standard application programming interface (API) for accessing database management systems (DBMS). The application uses ODBC functions through an ODBC driver manager with which it is linked, and the driver passes the query to the DBMS.
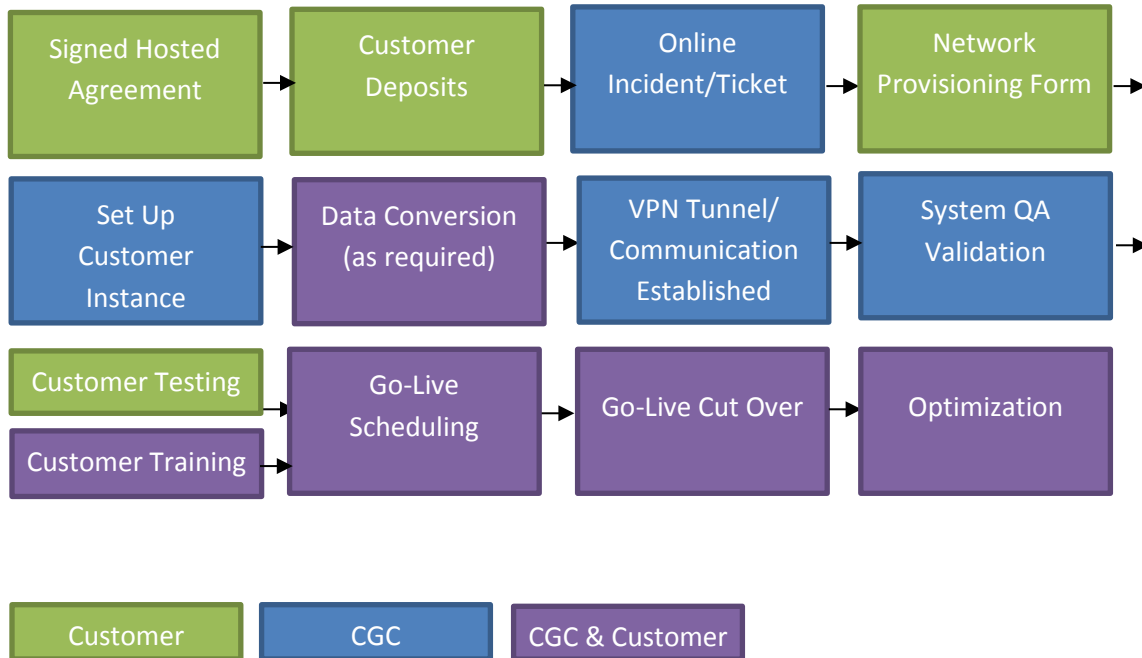
Online Incident/Ticket – CGC has established an online incident/ticket system that allows you to submit inquiries and issues to CGC and provides CGC with the opportunity to document, track and respond to these inquires through automated and established workflows in a timely manner.

Hosted Implementation/Migration Process

Agreement and Billing

In order to begin the process of planning and implementing your Hosted eCMS environment, a Hosted Agreement needs to be executed between your organization and Computer Guidance Corporation. Once a Hosted Agreement and any required deposits are received, CGC's accounting department will open an Online Incident/Ticket with our Technical Services department in CGC's support system to create your Hosted Implementation Environment. This process will be completed within 30 days after executing your Hosted Agreement. Once your Hosted Implementation Environment is live and you have access to it, billing will begin per the terms of your Hosted Agreement.

Implementation/Migration

Signed Hosted Agreement	→	Customer Deposits	→	Online Incident/Ticket	→	Network Provisioning Form	→
Set Up Customer Instance	→	Data Conversion (as required)	→	VPN Tunnel/ Communication Established	→	System QA Validation	→
Customer Testing / Customer Training	→	Go-Live Scheduling	→	Go-Live Cut Over	→	Optimization	

Customer	CGC	CGC & Customer

Hosted eCMS Implementation Check List Document

When the Technical Services Department (Tec or Technical Services team) receives the Online Incident/Ticket, they will provide you with a **Network Provisioning Form** to complete to ensure that all pertinent information is obtained to plan your Hosted eCMS implementation, including

- eCMS instance requirements
- Business Intelligence requirements
- VPN Tunnel configuration
- eForms VPN connection configuration
- SSL connections requirements
- data migration requirements

If this information is unclear or incomplete, our Technical Services team will be in contact with you to obtain all necessary details.

Next, if you are a current CGC customer migrating to a hosted environment, our Technical Services team will save a copy of your on-premise CMSFIL database. If it is less than 20 GB, we will FTP the backup file to a CGC data center. If it is larger, you will save the CMSFIL backup to a USB storage device and send it to CGC. Our Technical Services Department will be available to assist with this process. CGC performs the process of saving all eCMS data, functions and security settings.

Alternatively, if you are a new client currently migrating off of a third-party solution, our Professional Services and/or Software Delivery team will provide you with conversion templates in which to populate

your data for uploading into your eCMS Implementation Environment. Your Hosted Agreement will indicate if we are conducting a standard conversion process or not. A standard conversion process converts all of your master data sets without transactional data. A more complex data conversion process converts your transactional data sets as well. Our Professional Services team will assist you.

Our Technical Services team will then use the backup file or conversion file to create your Hosted Implementation System with your data. This instance will be used for testing and training prior to Go-Live. New client systems are created as Production with an empty database and handed over to CGC Professional Services and Software Delivery teams to work with customer to convert data.

CGC will establish the VPN tunnel, implement SSL connectivity to your hosted environment and setup eForms printers, and setup all servers necessary to run your Business Intelligence reporting. Further, our teams will work with you to set up email interfaces for eForms and IDI functions. We can interface with MS Exchange, Office 365 and most other standard SMTP email systems.

As soon as your Hosted eCMS is fully configured in your Hosted Implementation Environment per the information received from you and per the outlined processes/requirements, CGC's QA department will perform testing and validation of your system, functions and data. This will all take place in your Hosted Implementation Environment.

After the validation testing is completed, your organization will be provided with login credentials and your billing cycle will begin. At this time, your company will review the environment, perform any testing and obtain any training necessary from our Professional Services team.

When your organization feels comfortable, we will discuss your company's Go-Live schedule.

Go-Live

A typical Go-Live schedule for current customers and new customers is performed as described in the following scenarios.

   A.   Current Customer migrating off an older version, on-premise system:
       a.   Wednesday afternoon at 3:00 P.M. (AZ/MDT), the Technical Services team cuts off access to your on-premise system. Please note that this can vary depending on size of CMSFIL database – the larger the CMSFIL database is the earlier the cut-off time.
       b.   A Backup is performed of your on-premise CMSFIL database (and other files as needed) and is either FTP-ed or overnighted to CGC.
       c.   CGC refreshes your implementation system with the new backup received and places it in a live state.
       d.   Between the following Friday afternoon and Saturday morning, depending on the CMSFIL size and transport method, you will be given access to your live Hosted Implementation Environment for final validation testing.

e. Systems are available for additional testing on Saturday and Sunday if the go-live is not scheduled for the weekend, and in that case your general user community is allowed back on the live hosted system on Monday morning.

B. New Customer migrating off a third-party solution implementing eCMS:

a. Training is completed.
b. Wednesday afternoon at 3:00 P.M. (AZ/MDT) the Technical Services team places you are converted and tested data in eCMS in a live state.
c. Between the following Friday afternoon and Saturday morning, you will be given access to your live hosted environment for final validation testing.
d. Go/no-go decision for final cutover is made by you on that Friday.
e. Systems are available for additional testing on Saturday and Sunday, and your general user community is allowed back on the live hosted system on Monday morning.

Please note that this process may be altered depending on the customer's requirements and the environment the customer is migrating from.

Project Time Line and Scheduling

a. It takes about 4 weeks from the time CGC's Technical Services Department receives a completed Network Provisioning Form from the customer to the time CGC Technical Services team sets up the Hosted Implementation Environment and provides you with system access.
b. Items such as user libraries, networking technical skills and available resources on your side influence this timing, in addition to the number of implementations that are going on at CGC during your project time line.
c. You get to determine how long you need to test and train. It is important to determine this requirement prior to starting implementation. From CGC's perspective, we would prefer to target 1 to 2 months of testing/training before cutover.

Business Intelligence Reporting Back-Up and Reconciliation

There are several reports that can be used for reconciliation between your eCMS environment on your old system and your new hosted environment. You can run these reports on the old system and on the new system. You do not need to run all the reports, just those that apply to your business and are important to you. Some examples are outlined as follows.

General Ledger
Detailed General Ledger
Financial Statement Worksheet
YTD GL Summary Audit

Accounts Payable
Vendor Master Listing
Terms Code Listing
Halt Code Master Listing
Document Master Listing

State/Local Tax Code Master Listing
Sub Status Report by Vendor or Job
Sub Status Report by Journal Date
Outstanding Document Report
Open Payables by Due Date
History Report by Journal Date

Accounts Receivable
Customer Master Listing
Aged Trial Balance
Contract Status Report by Job or Customer
Contract Status Report by Journal Date
History Report by Due Date

Job Costing
Overhead Listing
Overhead Type Listing
Actual/Committed
Summary Job Analysis
Detail Job Cost Ledger by GL
Detail Job Cost Ledger by Job
Cost Analysis
Summary Contract Analysis (don't run this report unless you already use it)

Payroll
Distribution Master Listing
Work Comp Listing
Union Class Listing
Union Master Listing
Employee Master Listing
Employee Class Listing
Union Audit Report
Union Contributions Report
Union Report
Earnings History
Hours and Dollars History
Time Card Detail History
941 Register
W2 Register

HR

Benefit Master Listing

Benefit/Deduction Enrollment Listing

Personnel Master Listing (includes numerous Reports, please only print those that apply to your setup)

EEO Report

Equipment Accounting

Equipment Master Listing

Equipment Detail History – Equipment by Job, Equipment by Equipment Number

Depreciation Methods Listing

Depreciation Report

Equipment Maintenance

Maintenance Master by Specification

Open Work Orders

Purchasing

Open POs – PO Status by Job, PO Status by Vendor, PO Status by PO Number

Item Master Listing

Item Balance Listing

Item Class Listing

PO Special Instruction Listing

Time & Material Billing

Rate Master List (4 types)

Tickets Invoice – Invoice Print Tickets, Invoice Print Contracts

Order Processing

Part Detail Report

Business Functions Reconciliation

A. In preparation for migrating (or even upgrading to new service packs or fix packs), the payroll requirements for Go-Live are:
   a. All payroll postings need to be complete.
   b. There cannot be backout (reversal) checks or payout (termination) checks pending, these need to be fully processed or deleted in existing production before Go-Live.
   c. Time entry can be done, but there should be nothing in the register (entries may be reassigned to batch zero during the migration).
B. Other things to test before Go-Live are:
   a. Test all major processes used by the customer in all applications.

b. Test all input processes used for A/P invoices and Payroll.
c. Receive training as necessary for new features (if you are migrating to the same release level, this is usually not needed).
d. Have multiple users test, especially the key users in each area.

Infrastructure and Operations

A. Customer environments are running in a single tenant hosted configuration with dedicated IBM Power i and dedicated Windows server instances that are running on a virtualized IBM Power i and Hyper-V servers.
B. CGC has backup and disaster recovery built into our standard CGC configuration. Refer to **Hosted eCMS and Disaster Recovery Data Sheets** for details.

> Hosted eCMS Data Sheet
>
> Disaster Recovery Data Sheet

C. Note that there are different options for System i/iSeries Based System backup file retention. CGC has the ability to save the backup files for a longer period of time than the standard configuration, but it requires custom configuration that comes with additional costs. Again refer to the DR Data Sheet or contact CGC for additional information.
D. System Backups are performed at 11:00 P.M. local time Monday to Friday every week, including holidays. Please note that this time may vary.
E. CGC performs Monthly Maintenance on all hosted environments and this schedule is posted on the support website and communicated to you via email.

> Hosted Monthly Maintenance Schedule

F. Please refer to the Software Maintenance and Update section of this document for more information.

Software Maintenance and Update

A. All software related upgrade activities are included in your hosted contract.
B. Additional services such as modifications, custom items, software training and data migration are not included. Separate requests for such services need to be submitted via the Online Ticket/Incident system or Training Request form.

> Training Request Form
> Customer Support Online Ticketing/Incident System

C. The customer's eCMS database is backed up on a nightly basis utilizing a disk to disk backup. Our backup retention policy is as follows:
a. Daily backups are retained one week.
b. Weekly backups are retained one month.
c. The first weekly backup is utilized as a monthly backup and retained for two months.
d. All weekly and monthly backups are replicated to a second data center to retain a second copy.
e. Windows-based data is backed up nightly and replicated to a second data center. These backups are retained for two weeks.
f. Please refer to our DR Hosted Policies and Procedure document for additional details on data replication:

[Disaster Recovery Policies and Procedures](#)

D. CGC's goal is to keep your Hosted Environment as up-to-date as possible.
   a. CGC's standard operating procedure is to apply all service packs, fix packs and hot fixes to test environments first and then moving them over to production, allowing you to test and validate before moving the updates to your live environment.
   b. Since CGC's Hosted Environment and associated processes are SOC-compliant, CGC shall wait for you to formally request an update to be applied to your test and/or production environment before doing so. Each request needs to be submitted through CGC's Online Ticket/Incident system.
   c. You have a final say on all or any update or version upgrades, however, CGC highly recommends that you keep your system environments current at all times.
   d. Once an update is applied to your test environment, CGC usually allows you to run the update for about two weeks before installing it into the production environment.
   e. Whenever possible, upgrades and updates are performed off business hours and scheduled with you. In the case of dedicated installs, all users must log out of your system. Larger service packs or version upgrades may require implementation during business hours.
   f. CGC delivers a Monthly Maintenance window that takes place on a predetermined schedule during weekend hours starting on Saturday at 12:00 P.M. MST/AZ time and ending on Sunday at 8:00 A.M. MST/AZ time.
   g. The monthly maintenance window is posted on the CGC Portal Calendar six months in advance and is communicated to you via email.
      [Hosted Monthly Maintenance Schedule](#)
   h. An email communication of an upcoming Monthly Hosted Maintenance Window is sent out on the Wednesday 10 days prior to the Monthly Hosted Maintenance Window, and then again the Wednesday of the Monthly Hosted Maintenance Window week, and finally on the Friday of the week of the Monthly Hosted Maintenance Window.
   i. To ensure that your users are subscribed to receive these communications, please fill out this form.
      [Stay Connected Form](#)
E. CGC guarantees 99.7% availability for Customer's Hosted eCMS Managed Services production environment over a 365-day trailing period. We do issue SLA's upon request.

Connectivity

A. The VPN tunnel is only required for:
   o eForms Printer communications
   o IFS File Share access (positive pay, ACH file access)
   o iSeries user account administration
   o Any 'green screen' access
   o ODBC access
   o Can also be used for customer eCMS client access
A. Most customers use the SSL Internet access for client access.
B. eCMS is not a large bandwidth consumer. Any 5mb/1mb Internet circuit is adequate for client access. Customers that utilize imaging are the exception to this rule. Users that are uploading documents will require a more robust upload speed. 10mb is the suggested minimum for such users.

C. You can establish an ODBC connection to your hosted eCMS database.

D. Upon request, CGC evaluates the option to allow customers with third-party hosted providers ODBC access to the customer's database (the third-party must be able to support IPsec VPN tunnel). This request needs to be indicated in advance and the customer, the third-party provider and CGC need to collaborate to accomplish this.

Security

Data Access

Beside the customer, the CGC Technical Services team has administrative access to the customer's Hosted ERP system for the purpose of performing backups, software updates, and other tasks associated with system administration. Other CGC teams, including Application Support and Software Delivery may acquire access to the customer's ERP system and data, but this will take place only through a customer-initiated access permission request process resulting from support Incidents (Tickets) initiated by an authorized customer. This logged process grants temporary access for these support personnel using an established administrative account that is temporarily enabled and that utilizes a unique, randomly generated password issued for each instance that access is requested. The account is then disabled once the support task is completed.

Customer Data and/or Processes Protection from Unauthorized Physical and Logical Access

CGC hosting services are located in state-of-the-art Tier III data centers that provide best practices in physical security and fully redundant environmental support for power, cooling and fire protection. Please see information on our data center provider Iron Mountain below:

[Iron Mountain Data Center Services](#)

[Iron Mountain Data Center Modules](#)

Media protection controls provided include best practices restricting the use of unauthorized media as enforced by data center system administrators and internal IT Security policies.

Audit Record Types

CGC tracks all activities performed on customer systems via our web-based Customer Support System which is customer accessible. Data is never deleted from this system. Standard Windows event logging and iSeries system logging is also enabled. These records are available upon customer request and are maintained for six months. Firewall logging and monitoring is maintained on a rolling 2-week basis.

SAN/switch event logging and monitoring is maintained on a rolling 2-week basis. These records are available upon customer request. System Performance and availability monitoring is maintained on a daily basis. Reporting regarding these metrics is available upon customer request.

Encryption Mechanism for Data in Transit and Data at Rest

All in-transit data communication between our customers and their hosted systems occur over encrypted network connections. The encryption mechanisms used are IPSEC for access via VPN tunnel, and RSA (2048 bits) encryption for Secured Socket (SSL) access. Our clients use a combination of VPN tunnel and SSL access techniques.

At-rest security features include single-tenant, separate instance, and firewall blocked hosting architecture.

Audit

CGC performs annual SOC 2 audits performed by a third-party auditing firm.

For period October 1, 2018 through September 30, 2019.

> 2019 SOC2 Type 2 Audit Report

> 2019 SOC2 Type 2 Audit Bridge Letter

For period October 1, 2017 through September 30, 2018.

> 2018 SOC2 Type 2 Audit Report

> 2018 SOC2 Type 2 Audit Bridge Letter