



# GCS Golf e-Score

## Electronic golf scorecards

### Outline

Golf Computer Systems (GCS) develop computer software applications to manage various facets of golf administration and operations.

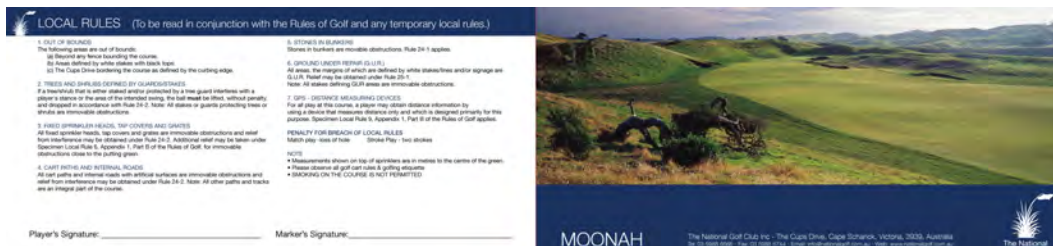
The key areas that are covered by GCS software are:

- Membership Management
- Online Membership including Accounts
- Golf Bookings / Reservations
- Online Tee Time and Facilities Bookings
- **Golf Handicapping, Competition and Tournament Management**
- **Electronic golf scorecards**
- **Member / Player Kiosks**
- **Television Leader Boards**
- **Online Leader Board and Historic Results**
- Point of Sale
- Web site development

This document focuses on electronic scorecards for use in golf scoring and golf handicapping. Electronic scorecards provide immediate hole by hole results from golf rounds that then flow through to competition results, to GOLFLink, to television Leader Boards and Online Leader Board / Historic Results.

Technical requirements and support and maintenance services are also outlined within this document.

Should you wish to discuss any aspect of any of the GCS modules in further detail please feel free to contact **Stuart McGregor** on **07 3366 6696**.



# GCS Golf e-Score

## Software Overview

GCS Golf e-Score is an electronic golf scoring method that makes use of the latest optical scanning technology.

In a similar manner to a TAB ticket or Lotto ticket, a golf scorecard can be conveniently marked during the golf round and fed into an Optical Reader to immediately read and record the strokes returned on each of the holes played during the golf round.

When the card is read by the optical reader the scores returned on each hole can be used to check and validate Stableford points, or the result returned in a Par round. Additionally, leader board displays, online results and printed results can be ordered in full count-back order. Eclectic results can be updated automatically, and analysis of how the course is playing against its current indexing can be produced.

- ✓ Immediate calculation of Stableford points
- ✓ Leader boards in count-back order
- ✓ Results in full count-back order
- ✓ Eclectic results updated
- ✓ Course indexing analysis
- ✓ Data -ready for September GOLFLink changes

The GCS golf handicapping module, Golf Manager, and our Player Touch Screen Kiosks are prerequisite to using the GCS Golf e-Score module.

The GCS Television Leader Board and Online Competition Results modules are further options that can be incorporated to maximize the use of the system.

**LOCAL RULES (To be read in conjunction with the Rules of Golf.)**

1. **LOCAL RULES (To be read in conjunction with the Rules of Golf.)**

2. **Match Index**

Strokes Given	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Scored at	8	12	4	16	10	6	14	2	18	7	11	3	15	5	13	9	17	1

Player's Signature: \_\_\_\_\_ Marker's Signature: \_\_\_\_\_



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## The e-Score card

The e-Score card is designed to allow the golfer to have the same freedom of recording of scores that is offered on the more “traditional” golf scorecard. The difference is the inclusion of a lotto-styled region for each of the front nine and back nine scores, on which the gross strokes returned on each hole are recorded via a mark drawn into the appropriate box.

Scores returned on a hole can be as many as 19, and as few as zero - a wipe.

Hole	Player (s)	Marker (s)	Hole	Player (s)	Marker (s)
1	4 3	1 2 3 4 5 6 7 8 9 10 W	10	5 2	1 2 3 4 5 6 7 8 9 10 W
2	5 2	1 2 3 4 5 6 7 8 9 10 W	11	5 1	1 2 3 4 5 6 7 8 9 10 W
3	5 1	1 2 3 4 5 6 7 8 9 10 W	12	4 3	1 2 3 4 5 6 7 8 9 10 W
4	4 3	1 2 3 4 5 6 7 8 9 10 W	13	3 3	1 2 3 4 5 6 7 8 9 10 W
5	4 3	1 2 3 4 5 6 7 8 9 10 W	14	6 1	1 2 3 4 5 6 7 8 9 10 W
6	7	1 2 3 4 5 6 7 8 9 10 W	15	6 1	1 2 3 4 5 6 7 8 9 10 W
7	5 1	1 2 3 4 5 6 7 8 9 10 W	16	4 3	1 2 3 4 5 6 7 8 9 10 W
8	3 2	1 2 3 4 5 6 7 8 9 10 W	17	3 2	1 2 3 4 5 6 7 8 9 10 W
9	5 2	1 2 3 4 5 6 7 8 9 10 W	18	7 1	1 2 3 4 5 6 7 8 9 10 W

Player, competition and scoring details are printed on the card in much the same manner as a manual scorecard. A further benefit of the GCS solution is the flexibility to have differing card layouts for different event types. Whether you are running a single event, a two-person team event, or a 6-man Ambrose, the GCS e-Score card can cater for them all.

***Detail required by the new Australian handicapping system such as course Slope rating, GA Handicap and Daily Handicap can also be included on the card, calculated and delivered via Golf Computer Systems' software.***

With the completed card marked, it is inserted into an Optical Reader and read in a second or less. Cards are inserted face-down, and either end of the card can be fed first into the reader, reducing player confusion and frustration over similar systems.

## The Benefits

The benefits of the GCS e-Score system are numerous, and not the least of which is **lower cost of ownership**. The capital costs to set up the system are highly competitive, as are the ongoing costs of card stock.

GCS Golf e-Score cards read and record hole-by-hole scores from an Optical Reader. The system offers the following benefits:

- High-speed score validation and processing means less waiting
- Very fast to close competitions, and particularly shotgun events
- High resolution scanner means fewer errors
- In-built damaged card compensation
- Cards can be fed from either end of the card – less confusion for golfers
- Greatly reduced staff time in checking of results
- Shorter time between finish and presentation – staff can leave sooner
- Correct and validated Stableford result to send to GOLFLink following January 2014 handicapping changes

- Immediate computation of correct card result – result or net – for player to see and check
- Full count-back calculation of results provides immediate efficiencies:
  - Leader board in count-back order
  - Player rankings based on count-back
  - Online results in count-back order
  - Printed reports in count-back order
  - Prize allocation uses count-back order / rank
- Instant eclectic score updates
- Immediate reporting of statistics - average strokes per hole by competition, by date, by date range, by grade, by handicap range, and by event type.
- Immediate data for course indexing.
- One touch score processing – card scan logs player in to the kiosk, presents scores, and a single touch saves the scores and logs the player out. It couldn't be simpler!

### The Reader

The Optical Reader used by the GCS Golf e-Score system is capable of reading 1500 cards per hour, so operates at very high speed. The model we use reads at twice the resolution of its predecessors, so accuracy is greatly enhanced, reducing the incidence of misreads that are seemingly quite common on competing systems. And provided the card is fed face down the reader will accurately read it whichever end of the card is fed first.

Access to the internal workings of the reader is via a simple flip top, ensuring ease of access in the unlikely event of a jam, or for periodic cleaning.



## Card Printing

Speed and accuracy of printing of scorecards is essential both to maintain consistently high quality of card reading, and also to provide speed and quality of service to golfers.

GCS use the latest Lexmark laser printers, renowned for their quality of manufacture, and their lower cost of ownership through high-yield toner options. Overall cost, quality and reliability is exceptional.

## Player Kiosks

GCS has been a provider of touch screen player kiosks for many years, and has integrated the e-Score system into the kiosk software. This allows clubs with existing touch screen hardware wishing to use e-Score to utilize that hardware rather than re-purchase, and provides new clients with the ability to get the benefit of the GCS kiosk software on their hardware also.

Besides reading the GCS e-Score cards, kiosk functions that can be performed by players include:

- join into competitions
- book future tee times
- manual entry of scores
- handicap display
- display of rounds history
- prize ledger enquiry
- email future booking schedule
- view a leader board
- retrieve messages
- manage playing partner lists
- print a scorecard

Staff otherwise perform many of these functions, so staff time savings can be very significant.

When e-Score cards are read through the Optical Reader the player is automatically logged in and hole-by-hole results are displayed on the kiosk screen. The golfer then accepts the score displayed, or if there are any scoring errors detected by the reader, they are highlighted on screen for the golfer's immediate attention. When correct, the golfer simply accepts and saves the returned scores, all in a matter of seconds.

**Score entry is as simple as presenting the scorecard to the optical reader, and a single key press to accept the score and log off.**

GCS touch screen kiosks are commercial grade units, moisture resistant, and include a magnetic card reader capable of reading GOLFLink and membership cards.



## Scoring formats

Scoring formats supported through the GCS Golf e-Score system include the following:

- ❖ Stroke
- ❖ Stableford
- ❖ Par
- ❖ 4 Ball Best Ball
- ❖ 4 Ball Aggregate
- ❖ 3 Ball Best Ball
- ❖ 3 Ball Aggregate
- ❖ Ambrose – 2,3,4 and 6 person
- ❖ Foursomes
  - American
  - Canadian
  - Chapman
- ❖ Team Stroke
- ❖ Team Stableford

Additionally, team formats can operate in conjunction with individual results, allowing handicapping of individuals within applicable team scoring formats if required.

## Score entry

Competition events are established within the GCS Golf Manager software application. Golf Manager is purpose-designed to manage single-round and multi-round competitions and tournaments, whether or not they are handicapped events.

Team events may be combined with individual events in which case there is a requirement for the entry of individual scores, and where applicable, team scores are calculated from the combined individual scores entered. Otherwise, team scores can be entered separately and in addition to individual scores.

## Multi-round events

Management and presentation of results for multi-round events is a further strength of Golf Manager. Termed tournaments within the software, they can comprise any number of rounds and results can be presented progressively throughout the tournament.

Starting handicaps can be held or frozen so that the commencing handicap is used in the calculation of results throughout the tournament.

Tournaments can also operate on the best x of y rounds, so the best 3 of 4 rounds returned for example.

## Eclectic Results

Eclectic competitions are another type of tournament given that they run over two or more rounds, so are a multi-round event.

Any number of eclectic tournaments can operate simultaneously: a Wednesday eclectic, a Saturday eclectic, and a combined Wednesday/Saturday eclectic for example.

Eclectic results are updated as a matter of course using the GCS e-Score system, and eclectic results can be printed at any time throughout or after the eclectic tournament. The current results of any individual can be viewed as part of their player record.

### Scorecard printing

Scorecards can be printed in bulk, or individually on demand from within Golf Manager and other GCS applications. The system will print all required data onto the scorecard, and the layout can be easily varied to suit the event type. A single Stableford card will vary markedly from that of a team Ambrose event for example. A report “designer” is incorporated to allow manipulation of card layout designs, and for these designs to be saved as templates for future selection and use.

We use Lexmark brand laser printers to print e-Score cards. Lexmark is at the quality end of the laser printer market, and offer features that make their printers ideal for the task.

- They are shipped with 10,000 page toner cartridges, which can be replaced with 25,000 page cartridges when expended. These high-yield toner options make the cost of ownership significantly less than their rivals.
- They have a relatively fast start-up speed so service delivery is greatly enhanced.
- A duplexing option allows printing of personalized cards for corporate days or special events where a personalized “outer face” of the scorecard is required.
- Cards feed from the paper cassette tray so re-stocking of paper is significantly reduced
- The quality, resolution and accuracy of printing is superb
- As a **Lexmark Premium Partner** we can supply these and other Lexmark printer models at very competitive prices

### Handicapping

The GCS Golf Manager application records the scores returned by players in complying competition events and transmits those scores to GOLFLink for handicap calculation. Resultant handicap changes are returned from GOLFLink back to Golf Manager in the one session, and the club database is then updated.

Golf Manager gained Tier 3 accreditation for use with the national Australian GOLFLink handicapping database in 1999, and has more recently accredited to communicate with GOLFLink using a Web Services communication model. Web Services provides a high speed link between the club database and GOLFLink and allows real-time lookup of player details; both members and visiting guests. This in turn increases the accuracy of player data used in competitions and significantly reduces staff data input in relation to visitors.

### 2014 Australian Handicapping Changes

The Australian golf handicapping system underwent a significant series of changes in January 2014 with the introduction of Slope handicap calculation, Daily Scratch Ratings (DSR's), and



Daily Handicaps. **Daily Handicaps** are calculated and presented on player kiosks and printed to eScore scorecards.

**Golf Computer Systems has accredited its golf management software with Golf Australia and GOLFLink for the 2014 handicapping changes. GCS is a Web Services accredited Tier 3 provider to GOLFLink.**

### Optional add-ons

There are a few add-on modules that can broaden the use of the golf management functions and impact positively on player procedures prior and post-game. They can also reduce staff input and provide timely information to players.

Golf Manager is a prerequisite of each of these add-on products.

14/03/2009 Club Championships (Stroke) 73 Players									
Rank G/N	Name	Club Grade	Round 1	Round 2	Round 3	Round 4	Agg Gross	Agg HCAP	Agg Nett
1 / 6	BASTEN, Jock	A	75	75			150	8	142
2 / 3	ABRAHAMS, Steve	A	75	77			152	12	140
3 / 2	HARTLEY, Jock	A	77	76			153	14	139
4 / 5	NEIL, Dean	A	75	80			155	14	141
5 / 10	RHALL, Edwin	A	78	78			156	10	146
5 / 8	BARKER, Doug	A	77	79			156	12	144
7 / 3	FRANCE, Hunter	A	84	86			170	30	140
8 / 6	ATWILL, Joseph	B	89	89			178	36	142
9 / 1	SHEARMAN, Dale	C	90	89			179	42	137
10 / 10	KOENIG, Gerard	B	91	89			180	34	146

### Leader Boards

The GCS Leaderboards display results of single events and also progressive results of multi-round events. The display can be on computer screen, television(s) or data projector.

Presentation of results can be controlled to suit. Colour schemes, fonts, font size, column headings and so on are all able to be managed administratively,

as can the duration results remain displayed before refreshing. Numerous display templates are provided with the software to ensure that the Leaderboard is ready to use.

Templates can be copied and modified to suit individual club needs.

Results can be ordered by Gross score, Nett score, by Grade by Gross score, by Grade by Nett score, or alphabetically by player name. Ordering options may vary by event type.

Advertising is an important part of the Leaderboard functionality. Commercial and promotional advertising can be displayed between or within sets of competition results, and

05/03/2009 Monthly Medal (Stroke)					
Rank G/N	Name	Club Grade	Gross Score	Play HCAP	Nett Score
4 / 1	MCGREGOR, Stuart	B	86	19	67
1 / 1	WATSON, James	A	70	3	67
2 / 3	COX, Ronald	A	73	4	69
3 / 4	PHILLIPS, Martin	A	83	12	71
8 / 5	THOMPSON, Todd	B	93	19	74
5 / 6	CARTER, Gregory	B	89	14	75
6 / 7	LEE, Carl	B	91	15	76
10 / 8	PARKER, Howard	B	96	19	77
7 / 9	WOOD, Joseph	A	92	12	80
8 / 10	LOPEZ, Harold	A	93	12	81

can continue to display when there are no results to display. This provides revenue opportunities to the club and some visible value to sponsors.

### Online results

We offer an online results module, iCompResults, that displays results of current days' events in real-time and also displays results of past events, back as far as the club elects. Single and team events can be displayed as can results of tournaments.

iCompResults requires that a Web server operate at the club to deliver content to the Internet. We can set this up easily where a suitable Windows operating system is in place.

### Touch screen player kiosks

Player kiosks enable interaction with the golf management system by golfers themselves. Kiosks are touch-enabled computers that can be desk or wall mounted in convenient locations for golfer access. Any number of kiosks can operate with the system simultaneously.

Touch screen kiosks play an important role in calculating and presenting players with their Daily Handicap on the day of play.

Visitor interaction with kiosks is via entry of their GOLFLink number, either by manual touch input, or by card swipe. Using Web Services, visitor details including handicap are immediately retrieved from GOLFLink and the database updated accordingly. This ensures highly accurate visitor data, which in turn reduces issues in the management of competitions and handicapping.

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 Web: www.membersclub.com.au

**COURSE ETIQUETTE**  
 To ensure a good pace of play please:  
 - Keep up with the group in front.  
 - Repair all divots and patch marks.  
 - Repair broken and loose pins in bunker (point) in direction of play.

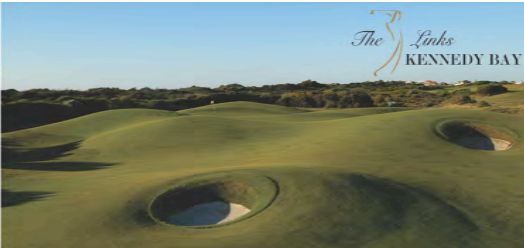
**DISTANCE MARKERS**  
 100m, 200m markers and yellow sprinkler head  
 Measurements are to the centre of the green.

**LOCAL RULES**  
 To be used in conjunction with the Rules of Golf:  
**OUT OF BOUNDS** (Rule 33-2a) – defined by boundary fences.  
**ABNORMAL GROUND CONDITIONS** (Rule 25-1) – in addition, repaired and unrepaid kangaroo damage on greens to be repaired as G&A.  
**PROVISIONAL BALL** (Rule 24-1) – in addition, when doubt exists whether a ball is lost in a water hazard (Rule 33-8a, Appendix 1 – Part A – Local Rule 2b).  
**EMBEDDED BALL** (Rule 25-2) – in addition, for a ball embedded in a grassed bunker face (Rule 33-8a, Appendix 1 – Part A – Local Rule 5d).  
**IMMOVABLE OBSTRUCTIONS** (Rule 24-2) – in addition, sprinklers within 2 club lengths of the green (Rule 33-8a, Appendix 1 – Part A – Local Rule 5d).

**MATCH INDEX**

HOLE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
INDEX	11	6	17	12	2	12	9	15	1	10	4	16	3	16	7	14	3	3

Player's Signature: \_\_\_\_\_ Marker's Signature: \_\_\_\_\_



## Features of companion GCS modules - at a glance

### Handicapping, Competition and Tournament Management

- GOLFLink compliant
  - o High speed Web Services link to GOLFLink
- multiple event scoring types
  - o Stroke, Stableford, Par, Ambrose, Foursomes, 4BBB, 4B Aggregate, 3BBB, 3B Aggregate, Irish 4Ball, Team events, team events in conjunction with individual handicapped scoring
- 1 tee, 2 tee, 3 tee and shotgun starts
- single round and multi-round event scoring
- progressive multi-round results (Club Championships for example)
- eclectic competitions
  - o members can be in multiple eclectic events simultaneously
- user selectable scoring rules per event – overall score, front/back 9, hole by hole
- automatic calculation of Stableford points or +/- from hole by hole scoring
- ad hoc score entry for away cards
- scorecard printing – multiple templates for differing event types
- mixed and medley events with handicapping
- variable club grade ranges
- Web results publishing
- detailed results and handicap reporting
- prize allocation and prize ledger
- event sponsor details
  - o print on scorecards
  - o display on leaderboard
- automated event opening and closing online (requires online booking module)
- automated event opening and closing on touch screen kiosks (requires touch screen kiosk module)
- course statistics reporting – average strokes per hole, index ratings
- balloting
- wait list management
- login security

for further details please visit <http://www.golfclub.com.au/golf-management-software/golf-competitions-and-handicaps.php>

### Player Touch Screen Kiosks

- interactive touch terminals
- view current handicap
- join into current and future competitions
- join playing partners into competitions
- manage frequent playing partner lists
- quick book for social play
- enter scores following round
  - o overall, front/back 9, hole by hole
- handicap history lookup
- handicap board to lookup all member handicaps
- leader board lookup display
- view and manage future bookings
- view messages sent from club
- view unclaimed prizes
- high speed GOLFLink lookup for visitors
  - o retrieves name, handicap, home club, gender details
  - o Web Services link
  - o Prominent feature for handicap lookup/calculation with Slope

for further details please visit <http://www.golfclub.com.au/golf-management-software/member-kiosks.php>

### Leader Board

- television or projector display of competition results
- player ranking by gross and nett
- player ordering by gross, nett, result, grade, name, grade by gross, or grade by nett
- various display templates for different event types
  - o Ambrose
  - o Foursomes
  - o Stroke
  - o Stableford/Par
  - o 4BBB and aggregate
  - o 3BBB and aggregate
  - o Team events
  - o Multi-round tournaments
  - o Best x of y rounds
- single round and multi-round event display
  - o progressive results for events such as Club Championships
- user defined display duration per page of results
- user selectable page transitions
  - o scroll, roll, fade, wipe, stripe, pixelated etc etc
- user definable colours and fonts
  - o differing colour schemes for different event types

- advertising between events
- advertising within event display
- multiple advertising display formats
  - o .JPG image
  - o .BMP image
  - o Flash
  - o HTML
- advertising can operate without event display

for further details please visit <http://www.golfclub.com.au/golf-management-software/leaderboards.php>

### Online Competition Results

- individual and multi-round tournament results
- simple 2-click ftp upload process if no club Web server in use
- fully automated if club Web server in operation
  - o zero staff interaction required to publish results
- user input of competition notes
  - o Sponsor details
  - o NTP's
  - o Ball Rundown
  - o Eagles etc
- club definable duration of historic results
- club definable ordering per event
  - o gross, nett, grade by gross, grade by nett
- can sit in publically accessible area or behind member login on your Web site

view examples of online results at:

<http://www.queanbeyangolf.com.au/results/>

<http://www.goldfieldsgolfclub.com.au/index.php/golf/online-results>


**LOCAL RULES (To be read in conjunction with the Rules of Golf.)**


1. Member's names are printed in order of handicap on the match card.  
 2. MATCHES MUST BE PLAYED WITHIN THE TIME SPECIFIED.  
 3. MATCHES MUST BE PLAYED WITHIN THE TIME SPECIFIED.  
 4. MATCHES MUST BE PLAYED WITHIN THE TIME SPECIFIED.  
 5. MATCHES MUST BE PLAYED WITHIN THE TIME SPECIFIED.  
 6. MATCHES MUST BE PLAYED WITHIN THE TIME SPECIFIED.  
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 16. MATCHES MUST BE PLAYED WITHIN THE TIME SPECIFIED.  
 17. MATCHES MUST BE PLAYED WITHIN THE TIME SPECIFIED.  
 18. MATCHES MUST BE PLAYED WITHIN THE TIME SPECIFIED.

**Match Index**

Stroke Given	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Taken at	8	12	4	16	10	6	14	2	18	7	11	3	15	5	13	9	17	1

Player's Signature: \_\_\_\_\_ Marker's Signature: \_\_\_\_\_





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## Technical talk

### Support & maintenance

Support and maintenance services are an important part of our client support systems. Support services are provided via telephone, email and Internet. Support matters are generally dealt with immediately to minimize disruption, so you are not issued a support “ticket” that is queued and dealt with at some later date.

To enable us to provide timely “on demand” support we require remote computer access. Preferred remote access software is RDP, TeamViewer or pcAnywhere. All GCS modules are supplied with an initial 12-month support and maintenance contract that provides software support as and when required, and periodic software updates throughout the maintenance period. Annual renewal is offered ahead of the anniversary of the support and maintenance contract. We also deliver periodic feature updates to our software that are of real substance and value, providing tangible benefits beyond the support functions.

We do not run site specific version control so all updates are provided to all clients, ensuring smooth operation of all software modules.

### Database and Module Structure

For the technically minded, GCS software is developed and written in Delphi; a strong and robust database development language accompanied by a broad range of powerful development tools and components. Current software modules are developed in Delphi 5 and are being progressively redeveloped in Delphi RAD Studio XE5. Online modules use ISAPI extensions.

The database engine behind the GCS modules is Nexus, a Client/Server database model with the database engine residing on a server and client side workstations accessing executable applications via desktop shortcuts. Nexus is SQL compliant. The GCS software modules comprise a range of separate executable applications, each managing its own area within a modular application suite. All applications share common data tables within the broader database.

### LAN Platform

The GCS applications will operate on Windows 2000 Server and beyond. Windows 2008/2012 Server or Windows 2011 SBS is preferred. Workstations will ideally run XP Pro, Windows 7 or Windows 8. As with most application software, the higher the server, network and workstation performance specifications, the better. A dedicated server is preferred, however in smaller sites we can operate on a concurrent server with a non-Server Windows version such as Win7 or XP Pro.

### Web Presence

Online applications operate on IIS or Apache Web Server housed on the database server operating at the club and connected to the outside world via broadband Internet connection.

Payment gateways can be incorporated in applicable applications to process online transactions via third party HTTPS connection. Our preferred gateway providers are either Paycorp or SecurePay.

Online access is via http on port 80, 81 or 82, or where SSL is invoked on port 443. Necessary ports need to be open and forwarded as required. SSL is not required where our recommended payment gateway is invoked as the payment is processed on a separate HTTPS site.

High speed Internet allows for optimal performance of content delivery.

### Remote Hosting

Though not the usual environment on which we operate, GCS software modules can reside on a hosted server environment (cloud). This environment has proven to produce excellent results to date.

## Contact Details

### Golf Computer Systems

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