

Emerald



Database Changes and Updates

Version 4.5

Emerald Management Suite
IEA Software, Inc.



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Preface

Several key factors required table modifications and changes, primarily in support of additional functionality added to the Emerald V4 release. The following section will describe the functional changes to Emerald that have necessitated changes to the database. The new database schema is *not* backwards compatible with 2.5 or earlier. Therefore, you cannot run the 2.5 applications on a 4.0 schema, and you cannot run the 4.0 applications on a 2.5 schema.

New Database Support for Sybase

The database interface has changed from the DB-LIB interface (which was Microsoft SQL Server specific) to an ODBC interface to allow for multiple database support. This database interface change also includes significant performance increases (over 100% in some billing runs) over the performance of Emerald 2.5.

Supported Systems Emerald 4 now fully supports Microsoft SQL Server 7.0 (or higher) and Sybase 11.0 (or higher).

Included Systems An optional distribution includes the Microsoft Data Engine (MSDE) and can be used for small installations.

New and Renamed Tables

The following sections will detail the changes in the Emerald V4 database schema from 2.5.

Changed Table Names

The follow table lists the changed table names from the Emerald 2.5 database schema.

Old Table	New Table	Description
Liscenses	Licenses	License table Spelling correction.

New Tables

The following table lists new tables added that were not a part of the Emerald 2.5 database schema.

Table Name	Description
AllowedHosts	Emerald can restrict access to the OnLine Registration Module based on the Host and/or subnet of the user. Column Descriptions\Types: AllowedHostID : integer OperatorGroupId : integer IPAddress : varchar(16) Description : varchar(100)

Table Name	Description
BannedCustomers	Emerald can ban certain customers from the OnLine Registration module based on callerid, ip address, etc to prevent mis-use from known problem users. Column Descriptions\Types: BannedCustId : integer CallerId : varchar (30) IPAddress : varchar (30) Description : varchar(100) Reason : varchar(255)
CancelReasons	Emerald can now track the cancellation of services and can be user-configured to track why the account has been cancelled. Column Descriptions\Types: CancelReasonID : integer CancelDescription : varchar (100)
CCImportColumns	In support of new CC/ES import routines Column Descriptions\Types: ImportColumnID : integer ExportID : integer FieldType : smallint SortOrder : smallint Position : smallint Description : varchar(64) Quoted : smallint FieldSize : smallint ApproveValue : varchar(50) DeclineValue : varchar(50) ErrorValue : varchar(50)
CreditCards	Emerald will track customer credit card information outside of the MBR record so that separate "bill-to" address information may be maintained for the cardholder Column Descriptions\Types: CustomerID : integer CardHolder : varchar (50) CardNumber : varchar(20) ExpirationDate: varchar(20) BillToAddress1 : varchar (100) BillToAddress2 : varchar(100) BillToCity : varchar(50) BillToState : varchar(50) BillToProvince : varchar(50) BillToZip : varchar(20) BillToCountry : varchar(50) AutoBill : smallint LastModifyDate : datetime LastModifyUser : varchar(15)

Table Name	Description
EmailLogs	Contains a log of all system emails (invoice, cc approve/decline, incident, etc). Column Descriptions\Types: LogMsgID : integer LogDate : datetime AccountId : integer CustomerId : integer LogDesc : varchar (63)
Exports	In support of new CS/ES export/import Column Descriptions\Types: ExportID : integer Description : varchar(64) Separator : varchar(6) QuoteString : varchar(6) SQLString : varchar(256) HeaderRow : small int ApproveString : varchar(100) DeclineString : varchar(100) ApproveMatch : smallint DeclineMatch : smallint ExportType : smallint Filter : varchar(20) Lines : smallint
ExportColumns	In support of new CS/ES export functionality Column Descriptions\Types: ExportColumnID : integer ExportID : integer SortOrder : smallint FieldName : varchar(32) Description : varchar(64) Quoted : smallint MinSize : smallint MaxSize : smallint Align : smallint Format : smallint Padding : char (1) ExportValue : varchar(100) Include : smallint
FileTransfers	FTP File Transfer details are stored from EmerAuth. Column Descriptions\Types: TransferDate : datetime AccountID : integer FileName : varchar (100) NumBytes : integer Direction : smallint Processed : smallint

Table Name	Description
GLCodes	GL Mapping in support of accounting package integration Column Descriptions\Types: GLCodeID : integer GLCode : varchar(32) Description : varchar(32) DetailFlag : numeric(1)
IncidentStates	User-configurable incident states for subaccount incidents Column Descriptions\Types: IncidentStateID : integer IncidentState : varchar(30)
Languages	Emerald now supports multiple languages. This table lists the language options available (and which is the system default language and which is the language selected for current system use) Column Descriptions\Types: LanguageID : integer Description : varchar(30) Default : integer InUse : integer
LateNoticeTypes	Types of late notices/fees available Column Descriptions\Types: LateNoticeTypeID : integer Description : varchar(50) GroupID : integer MinAmount : decimal MinDays : integer LateCharge : decimal AsPercentFlag : numeric(1) Active : numeric (1) SortOrder : integer
LateNotices	The table to store late notice data Column Descriptions\Types: LateNoticeId : integer CustomerId : integer LateNoticeTypeID : integer NoticeDate: datetime SentDate : datetime Balance : decimal
LateNoticeNotes	Track note(s) sent with each late notice (maps late notices to notes) Column Descriptions\Types: LateNoticeID : integer NoteID : integer

Table Name	Description
LDAPServers	In support of the new LDAP synchronization with Emerald (Emerdap) Column Descriptions\Types: LDAPServer : varchar (50) Type : integer LastModifyDate : datetime Calls : integer
Mappings	Radius Attribute Mappings Column Descriptions\Types: Attribute : varchar (32) RadAttributeID : integer RadVendorID : integer RadVendorType : integer MapType : integer
MapAttributes	Attributes for Radius Attribute Mappings Column Descriptions\Types: Attribute : varchar (32) Description : varchar(255) ReplyType : smallint MapType : integer
MapValues	Values for Attributes for Radius Attribute Mappings Column Descriptions\Types: Attribute : varchar (32) Value : varchar(32) RadValue : integer Description : varchar(255) MapType ; integer
MetaColumns	Support dynamic data evaluation of Emerweb Column Descriptions\Types: MetaColumnID : integer MetaTableID : integer Column Name : varchar (32) Description : varchar (255) DepTable : varchar (32) DepColumn : varchar (32) DepGroup : integer MetaRuleID : integer Required : numeric(1) Nullable : numeric(1) Quoted : numeric(1) MinSize : integer MaxSize : integer IsKey : numeric(1) ColumnType : integer

Table Name	Description
MetaRules	Support dynamic data evaluation of Emerweb Column Descriptions\Types: MetaRuleID : integer Description : varchar(255)
MetaTables	Support dynamic data evaluation of Emerweb Column Descriptions\Types: MetaTableID : integer TableName : varchar(32) Description : varchar(255) GroupMetaTableID : integer MetaTableGroupID : integer
Notes	User-configuration of statement/invoice/late notice Notes Column Descriptions\Types: NoteID : integer NoteType : integer Effective : integer EffectiveStart : datetime EffectiveEnd : datetime Region : varchar(15) GroupID : integer BalanceCriteria : varchar(15) AcctTypeCriteria : varchar(15) PayDateCriteria : smallint Priority : smallint Note : varchar(255)
InvoiceNotes	Track note(s) sent with each invoice (maps invoices to notes) Column Descriptions\Types: InvoiceID : integer NoteID : integer

Table Name	Description
OnlineSignups	Signups via the on-line server are logged, allowing you to see where they originated. Column Descriptions\Types: SignUpID : varchar(30) FirstName : varchar (30) LastName : varchar(30) Address1 : varchar(100) Address2 : varchar(100) City : varchar(100) State : varchar(100) Province : varchar(50) Zip : varchar(100) Country : varchar (50) Region : varchar(15) ReferredBy : varchar(25) AccountType : varchar(15) Login : varchar(32) Password : varchar(16) MaidentName : varchar(25) NetSoftware : varchar (15) SystemType : varchar(15) ModemSpeed :varchar(15) CallerID : varchar (16) FramedAddress : varchar (16) CallDate : datetime SignDate : datetime Status : varchar(20) PaymentOptionID : integer CardNumber : varchar(20) CardExpiration : varchar(10) SignUpComment : varchar(255)
RadRoamPorts	On-line users are not listed in the on-line list for incoming proxy users. Column Descriptions\Types: NASIdentifier : varchar(16) Port : integer Username : varchar (32) AcctSessionID : varchar (16) AcctStatusType : smallint CallDate : datetime FramedAddress : varchar (16) CallerID : varchar (15) ConnectInfo : varchar (32)
ScheduleIntervals	Bill Scheduler config Column Descriptions\Types: Interval : varchar (32) Seconds : integer
ScheduleIntervals	Bill Scheduler config Column Descriptions\Types: Interval : varchar (32) Seconds : integer

Table Name	Description
ScheduleLogs	Bill Scheduler config Column Descriptions\Types: ScheduleID : integer Status : smallint Description : varchar (255) StartDate : datetime EndDate : datetime
Schedules	Bill Scheduler config Column Descriptions\Types: ScheduleID : integer ScheduleServerID : integer TaskName : varchar (32) Parameter : varchar (255) TargetSecs : integer MaxSecs : integer Status : smallint LastStatus : varchar (255) LastStart : datetime LastUpdate : datetime Interval : integer StartDate : datetime Aligned : smallint Description : varchar (100) LockServerID : integer Active : smallint MaxConcurrent : integer LastModifyDate : datetime LastModifyUser : varchar (15) Operator varchar (15)
ScheduleLogs	Bill Scheduler config Column Descriptions\Types: ScheduleID : integer Status : smallint Description : varchar (255) StartDate : datetime EndDate : datetime
ScheduleServers	Bill Scheduler config Column Descriptions\Types: ScheduleServerID : integer Server : varchar (32) IPAddress : varchar (32) Port : integer Description : varchar (100)

Table Name	Description
ScheduleTasks	Bill Scheduler config Column Descriptions\Types: TaskName : varchar (32) TaskType : varchar (32) Description : varchar (255)
SendMethods	Master Accounts Send Methods Column Descriptions\Types: SendMethodID : integer Description : varchar(20) SendMethodCharge : decimal AsPercentFlag : numeric(1) ApplyChargeFlag : numeric(1)
Statements	The table to store statement data Column Descriptions\Types: StatementId : Long CustomerId : Long StatementDate: datetime SentDate : datetime PrevBal : decimal EndCurBal : decimal End30Bal : decimal End60Bal : decimal End90Bal : decimal End120Bal : decimal
StatementNotes	Track note(s) sent with each statement (maps statements to notes) Column Descriptions\Types: StatementID : integer NoteID : integer
Strings	Locale specific strings and tags can be defined or changed. Column Descriptions\Types: StringID : integer AppName : varchar (32) Version : integer LanguageID : integer Data : varchar (255)
SyslogDefs	System log definitions Column Descriptions\Types: DefID : smallint Version : smallint Data : varchar(255)

Table Name	Description
SyslogFilters	System log filters Column Descriptions\Types: SyslogFilterID : integer IPAddress : varchar (16) Severity : smallint Substring : varchar(255)
Syslogs	Any syslog compatible application can log errors, warnings, etc, so that you can view them from within Emerald. Column Descriptions\Types: LogDate : datetime DefID : smallint Version: smallint Severity : smallint Facility : smallint IPAddress : integer

New and Changed Columns

New Columns

The following table shows Columns added to existing tables.

Table Name	Column Name	Description
AccountTypes	AccountTypeID	Identity column (replaces Account Type as primary key)
AccountTypes	GLMapID	GL code which this account type maps to
AccountTypes	LoginLimit	Default Login Limit for New Service
AccountTypes	TimeLeft	Default Time Left for New Service
AccountTypes	HomeDirSize	Default Home Directory Size for New Service
AccountTypes	Quantity	Default Pay Period for New Service
AccountTypes	SendBill	Default SendBill for New Service
AccountTypes	RemoteAccess	Default Remote Access for New Service
AccountTypes	GLCodeID	GL Code for Financial Exports
Aliases	AliasID	Identity column (replaces Alias as primary key)
Charges	ChargeTypeID	Added charge type tracking in support of GL mapping
ChargeTypes	GLMapID	GL code which this charge type maps to
Discounts	AsPercentFlag	Flag to indicate Percentage vs. flat rate discount
Discounts	DiscountID	Identity column (replaces Discount as primary key)
Domains	GroupID	The specific GroupID the domain belongs to (or none for Global).
ExternalSystems	ExportID	Links export config to external systems
ExternalSystems	LastSyncDate	Last time of a db sync
ExternalSystems	FileMode	Flag for file append or overwrite
ExternalTrans	CreditCardNumber	Credit Card number for this transaction (added for historical/logging).
ExternalTrans	CreditCardExpire	Credit Card Expire for this transaction (added for historical/logging).
ExternalTrans	RebatchTries	Number of rebatch tries
ExternalTrans	LastRebatchTry	Date/time of last rebatch try
Forwards	ForwardID	Identity column (replaces Forward as primary key)
Groups	BillingOption	Whether to send out invoices/statements/both
Groups	StatementRunDay	What day option to run monthly statements for all MBRs
Groups	SendCredits	Option whether to send credit statements or not
Groups	PartialPmtExtOption	Whether all services extended on partial pmt, or just those that pmt was applied
Groups	PartialPmtExtDays	Max number of days to extend services on partial payment processing
Invoices	StatementId	ID of statement on which this invoice was associated
Invoices	Comments	Extra comments regarding the invoice.
InvoiceTypes	InvoiceTypeID	Identity column (replaces InvoiceType as primary key)
InvoiceItems	AccountID	AccountID the line item is for. This allows for updating the service when this line item is paid.
InvoiceItems	AccountTypeID	AccountTypeID the line item is for. This is added for simplified Account Type revenue summary.
InvoiceItems	ChargeTypeID	Added charge type tracking to support GL mapping
InvoiceItems	GLState	Indicates state for the data export to external accounting package
InvoiceItems	PaidAmount	How much of the line item has been paid. This allows for true balance forward operation without making a payment to a specific invoice.
Logs	LogMsgID	Log identifier
Logs	Operator	Operator responsible for log entry
Logs	AccountID	SubAccount involved in log entry
MasterAccounts	Operator	The operator who created the Master Billing Record.
MasterAccounts	BillDay	Anniversary day of month used to determine when to do invoicing for this MBR
MasterAccounts	CancelDate	Date the account was cancelled by the service provider.
MasterAccounts	CancelReasonID	Reason why the account was cancelled by the service provider.
MasterAccounts	Balance_30	30 days out balance

Table Name	Column Name	Description
MasterAccounts	Balance_60	60 days out balance
MasterAccounts	Balance_90	90 days out balance
MasterAccounts	Balance_120	Over 120 days out balance
MasterAccounts	Over30_Count	Number times in over 30 category
MasterAccounts	Over60_Count	Number times in over 60 category
MasterAccounts	Over90_Count	Number times in over 90 category
MasterAccounts	Over120_Count	Number times in over 120 category
MasterAccounts	AgedDate	Last date aging calculated
MasterAccounts	Pending_credit	Credits since last statement/billing run
MasterAccounts	Pending_debit	Debits since last statement/billing run
MasterAccounts	StatementDate	Last statement run date
MasterAccounts	NoticeDate	Last overdue notice date
MasterAccounts	Gender	Gender
MasterAccounts	Salutation	Salutation of user
ModemSpeeds	ModemSpeedID	Identity field (replaces ModemSpeed as primary key)
NetSoftware	NetSoftwareID	Identity field (replaces NetSoftware as primary key)
Objects	Value	The numeric value of the object if it applies
Objects	Data	The alphanumeric value of the object if it applies
Operators	LanguageID	Language option pre-configured for Operator
Payments	CheckNumber	The Check number of the payment, if payment type is check.
Payments	GLState	Indicates state for the data export to external accounting package
PayMethods	PayMethodID	Identity field (replaces PayMethod as primary key)
PayMethods	PayMethodCharge	Charge associated with this pay method
PayMethods	AsPercentFlag	Charge is percent as opposed to flat rate
PayMethods	ApplyChargeFlag	Flag to say how to apply charge
PaymentTypes	PaymentTypeID	Identity field (replaces PaymentType as primary key)
PaymentTypes	GLMapID	GL code which this payment type maps to
Rates	FreeDays	Bit wise flag set for free days (ie, days we don't charge for that rate).
RadAttributes	ReplyType	Type of reply allowed for this attribute. 0=none, 1=none or one, 2=one or more. Attributes with a value of 0 will not be shown when selecting reply attributes.
RadAttributes	AliasAttributeID	AttributeID to map this attribute to for RadiusNT/X accounting.
RadAttributes	AliasVendorID	VendorID to map this attribute to for RadiusNT/X accounting.
Rates	StandardRate	Rate for usage billing support+
Rates	RateType	Type of rate to define rate type such as time, data or both
Rates	MinCharge	Minimum applied rate
Rates	MaxCharge	Maximum applied rate
Regions	RegionID	Identity column (replaces Region as primary key)
SalesPerson	SalesPersonID	Identity column (replaces Salesman as primary key)
ServerTypes	SNMPUser	Default SNMP value when creating Server ports. Servers.Type is also used to calculate the final SNMPUser string for the port.
ServerTypes	SNMPType	Flag to indicate SNMP type
Strings	Version	Application version for internal localization support
Strings	LanguageId	Application language for internal localization support
SubAccounts	DomainID	DomainID associated to the service. This replaces the functionality of the old MasterAccounts -> Groups -> DomainID link, although that link is still used to provide a default DomainID when creating a new service.
SubAccounts	Gender	Gender
SubAccounts	Salutation	Optional salutation of subaccount
SystemTypes	SystemTypeID	Identity column (replaces SystemType as primary key)
Taxes	Limit	Limit value of tax.
Taxes	LimitType	Limit type of tax. This can be floor or ceiling.
Taxes	GLMapID	GL code which this tax type maps to

Changed Columns

The following table shows columns changed in an existing table.

Old Table Name	Old Column Name	New Table Name	New Column Name	Description
Actions	Date	Actions	CreateDate	Date is a reserved word
BankTrans	Type	BankTrans	TransType	Type is a reserved word
Configs	Type	Configs	ConfigType	Type is a reserved word
ExternalSystems	LogFile	varchar(20)	Varchar(150)	To accommodate unix file names
ImailConfigs	Type	ImailConfigs	ImailType	Type is a reserved word
Incidents	Date	Incidents	CreateDate	Date is a reserved word
Incidents	Closed	Incidents	IncidentStateID	Multiple states now available
Invoices	Date	Invoices	CreateDate	Date is a reserved word
Invoices	EndDate	InvoiceItems	EndDate	Start Date on line item not invoice
Invoices	StartDate	InvoiceItems	StartDate	End Date on line item not invoice
Invoices	Type	Invoices	InvoiceTypeID	Identity field now used
MasterAccounts	BilledThru	SubAccounts	BilledThru	Moved to SubAccounts for service billing.
MasterAccounts	MaNew	MasterAccounts	Status	More descriptive field name
MasterAccounts	PayPeriod	SubAccounts	PayPeriod	Moved to SubAccounts for service billing.
MasterAccounts	PayMethod	MasterAccounts	PayMethodID	Now uses identity field
MasterAccounts	Region	MasterAccounts	RegionID	Identity field now used
MasterAccounts	SalesPerson	MasterAccounts	SalesPersonID	Now uses identity field
MasterAccounts	SendMethod	MasterAccounts	SendMethodID	Send Method now maintained in new table
Payments	Date	Payments	PaymentDate	Date is reserved word
Payments	Type	Payments	PaymentTypeID	Identity field now used
RadAttributes	Type	RadAttributes	RadAttributeType	Type is reserved word
RadRoamDomains	AccountType	RadRoamDomains	AccountTypeID	Now uses identity field
RadTriggers	Type	RadTriggers	RadTriggerType	Type is reserved word
SubAccounts	AccountType	SubAccounts	AccountTypeID	Identity field now used
SubAccounts	Discount	SubAccounts	DiscountID	Identity field now used
SubAccounts	ModemSpeed	SubAccounts	ModemSpeedID	Identity field now used
SubAccounts	SaExpireDate	SubAccounts	ExpireDate	Clarified field
SubAccounts	SystemType	SubAccounts	SystemTypeID	Identity field now used
SubAccounts	SaNew	SubAccounts	Status	More descriptive field name
SubAccounts	NetSoftware	SubAccounts	NetSoftwareID	Identity field now used

Obsoleted Tables And Columns

Obsoleted Tables

The following table shows the database tables that are not longer used in Emerald 4.

Table Name	Description
NameTrans	Unused
TimeLimits	Replace by rate tables.
TimeUsages	Replace by rate tables.
Traffic	Unused
TransUser	Unused
Scripts	Unused
ScriptMaps	Unused
Windows	Unused
WindowsObjects	Unused
Classes	Unused
ClassDates	Unused

Obsolete Columns

The following table shows the columns that are no longer used in Emerald 4.

Table Name	Deleted Column	Description
AccountTypes	Prefix	Unused field.
AccountTypes	Suffix	Unused field.
AccountTypes	Quantity	Unused field. Moved to AccountTypeDefaults.Quantity.
CallHistory	Months	Unused field. Was always 1 billing cycle.
IMailConfigs	IMailConfigID	Unused field. AccountID should be the key therefore ImailConfigID is not needed.
Invoices	Months	Unused field. Replaced by InvoiceItems.Quantity.
Invoices	Description	Unused field. Replaced by Invoices.Comments.
InvoiceItems	PaymentID	Replaced with PaidAmount tracking field.
MasterAccounts	ExpireDate	Removed. Only SubAccounts.ExpireDate is used now.
MasterAccounts	Extension	Removed. Only SubAccounts.Extension is used now.
MasterAccounts	PrePaid	Unused field.
MasterAccounts	MaCurrent	Combined with maNew into new Status column
Objects	GroupIDReq	Unused field.
Objects	Object	Unused field.
SubAccounts	Shell	Legacy field.
SubAccounts	SaCurrent	Combined with saNew into new Status column