

Appendix A

Diagnostics Log Files

The PackageObj Log File

MTS Packages or COM+ Applications are a set of components that perform related functions. The MTS Server Packages or COM+ Applications are selected in the Packages and Detail node. This file contains information regarding each Package/Application activation process – each activation represents a single MTS Server Process or COM+ Application.

| PackageObj | | |
|------------------|--------------|--|
| Column | Datatype | Description |
| BeginDateTime | DATETIME | The date and time the server process started |
| BeginTime | FLOAT | System time (in milliseconds) when the server process started |
| ChkPtRecordID | CHAR(40) | Indicates this record is part of a ChkPt dump, and identifies the dump that it's associated with. |
| ComputerName | VARCHAR(225) | The name of the computer that this was created on |
| EndDateTime | DATETIME | The date and time the server process ended |
| EndTime | FLOAT | System time (in milliseconds) when the server process ended |
| GeneratedChkPtID | CHAR(40) | PackageActivations that crash generate a ChkPt record. This is the ID that is generated by this PackageActivation. |
| PackageGuid | CHAR(40) | The MTS package/COM+ application GUID |
| PackageName | VARCHAR(225) | The MTS package/COM+ application name |
| ProcessID | INT | The NT process ID |
| ShutdownReason | INT | 0=Normal 1=Crash |

Table A-1 PackageObj Log File

The ActivityObj Log File

An Activity is a collection of MTS/COM+ objects that have a single logical thread of execution. This data is stored in the ActivityObj log file.

| ActivityObj | | |
|---------------|--------------|---|
| Column | Datatype | Description |
| Aborted | BOOLEAN | 0=Normal 1=Aborted |
| ActivityGuid | CHAR(40) | MTS/COM+ activity GUID of the activity that started the transaction |
| BeginDateTime | DATETIME | The date and time when the activity started |
| BeginTime | FLOAT | System time (in milliseconds) when the activity started |
| ComputerName | VARCHAR(225) | The name of the computer that this activity was created on |
| EndDateTime | DATETIME | The date and time when the activity ended |
| EndTime | FLOAT | System time (in milliseconds) when the activity ended |
| FirstIID | CHAR(40) | Guid of first method to start in this activity |
| FirstMethod | INT | Interface ID of the first method to start in this activity |
| FirstObject | VARCHAR(255) | First object to start in this activity |
| IsDotNetObj | INT | Internal use only |
| NumActivities | INT | Internal use only |
| PackageGuid | CHAR(40) | The MTS package/COM+ application GUID |
| PackageName | VARCHAR(225) | The MTS package/COM+ application name |
| ThreadID | INT | The thread that started this activity |
| UserName | VARCHAR(225) | The name of the NT user associated with this activity |

Table A-2 ActivityObj Log File

The TxnObj Log File

Transactions represent the atomic units of work for an Activity. In terms of MTS and COM+, work starts and the Context SetCompletes or SetAborts. For transactional components, each Transaction results in a DTC transaction.

Transaction data is stored in the TxnObj log file. There is no primary key for this data.

| TxnObj | | |
|------------------|--------------|--|
| Column | Datatype | Description |
| ActivityGuid | CHAR(40) | MTS/COM+ activity GUID of the activity that started the transaction |
| BeginDateTime | DATETIME | The date and time the transaction started |
| BeginTime | FLOAT | System time (in milliseconds) when the transaction started |
| ChkPtRecordID | CHAR(40) | Indicates that this record is part of a ChkPt dump, as well as the dump that it's associated with |
| ComputerName | VARCHAR(225) | The name of the computer that this transaction was created on |
| EndDateTime | DATETIME | The date and time the transaction ended |
| EndTime | FLOAT | System time (in milliseconds) when the transaction ended |
| GeneratedChkPtID | CHAR(40) | ID of the ChkPt record that is generated by PackageActivations that crash or Transactions that abort |
| ObjectID | FLOAT | Instance ID of the component |
| PackageGuid | CHAR(40) | The MTS package/COM+ application GUID |
| PackageName | VARCHAR(225) | The MTS package/COM+ application name |
| TsdiProp | CHAR(40) | Internal use only |
| TxnGuidProp | CHAR(40) | The DTC Transaction Guid |
| TxnStateProp | INT | Outcome: 1 = Commit 2 = Abort 0 = Unknown |
| UniqueGuid | CHAR(40) | Unique identifier to link instances of activities, transactions, objects and methods |

Table A-3 TxnObj Log File

The ObjectObj Log File

An Object is a run time instance of a component. The Object data is recorded in the ObjectObj log file.

| ObjectObj | | |
|----------------|--------------|---|
| Column | Datatype | Description |
| Aborted | BOOLEAN | 1=Aborted 0=Did not abort |
| ActivityGuid | CHAR(40) | MTS/COM+ activity GUID of the activity that started the transaction |
| BeginDateTime | DATETIME | The date and the object was created |
| BeginTime | FLOAT | System time (in milliseconds) when the object was created |
| ClientIP | CHAR(15) | W2K: Client IP address NT4: NULL |
| Clsid | VARCHAR(255) | Object name |
| Completed | BOOLEAN | 1=Completed 0=Did not complete |
| ComputerName | VARCHAR(225) | The name of the computer that this object was created on |
| ContextID | FLOAT | W2K: ContextID of the component. NT4: NULL |
| CreatedTsidObj | INT | Internal use only |
| EndDateTime | DATETIME | The date and time the object completed |
| EndTime | FLOAT | System time (in milliseconds) when the object completed |
| ErrIID | CHAR(40) | Method GUID which caused exception |
| ErrMethod | INT | MethodID which caused exception |
| ErrStatus | INT | HRESULT of Methods in this object. |
| FirstIID | CHAR(40) | Guid of first method called |
| FirstMethod | INT | MethodID of first method called |
| IsFirstObject | INT | Internal use only |
| MethodExcept | INT | 0 = Method Return 1 = Method Exception |
| NumResCreated | INT | Number of Resource Dispensers created |
| NumResUsed | INT | Number of Resource Dispensers used |
| ObjectID | FLOAT | Instance ID of the component |

| ObjectObj | | |
|------------------------|----------------|--|
| Column | Datatype | Description |
| PackageGuid | CHAR(40) | The MTS package/COM+ application GUID |
| PackageName | VARCHAR(225) | The MTS package/COM+ application name |
| ServerIP | CHAR(15) | W2K: Client IP address NT4: NULL |
| TotalResourceUsageTime | FLOAT | Internal use only |
| TsdiProp | CHAR(40) | Internal use only |
| TxnGuidProp | CHAR(40) | The DTC Transaction Guid |
| UniqueGuid | CHAR(40) | Unique identifier to link instances of activities, transactions, objects and methods |
| URL | VARCHAR (1024) | W2K: URL that created the object NT4: NULL |

Table A-4 ObjectObj Log File

The MethodObj Log File

Methods are procedures that act upon an object. The MethodObj log file contains every MethodCall on a component instance basis.

| MethodObj | | |
|-----------------|--------------|--|
| Columns | Datatype | Description |
| ApplicationName | VARCHAR(255) | Name of the application |
| BeginDateTime | DATETIME | The date and time the method was called |
| BeginTime | FLOAT | System time (in milliseconds) when the method was called |
| ComputerName | VARCHAR(255) | The name of the computer where this method was called |
| EndDateTime | DATETIME | The date and time the method returned. |
| EndTime | FLOAT | System time (in milliseconds) when the method returned |
| ErrStatus | INT | HRESULT of the MethodCall |
| MethodID | INT | Interface ID for this method |
| MethodIID | CHAR(40) | GUID for this method |
| MethodName | VARCHAR(255) | Name of the method |
| ObjectID | FLOAT | Instance ID of the component |

| MethodObj | | |
|------------|----------|--|
| Columns | Datatype | Description |
| UniqueGuid | CHAR(40) | Unique identifier to link instances of activities, transactions, objects and methods |
| Valid | INT | MTS misses events under heavy load so some data may be invalid. 0 = Some data may not be valid 1 = All data is valid |

Table A-5 MethodObj Log File

The ResourceObj Log File

ResourceDispenser is a service that provides the synchronization and management of non-durable resources within an object. The records are stored in the ResourceObj log file and they associate a ResourceDispenser with a particular instance.

| ResourceObj | | |
|----------------|--------------|--|
| Column | Datatype | Description |
| ActivityGuid | CHAR(40) | MTS/COM+ activity GUID of the activity that started the transaction |
| BeginDateTime | DATETIME | The date and time the resource dispenser started |
| BeginTime | FLOAT | System time (in milliseconds) when the resource dispenser started |
| ComputerName | VARCHAR(225) | The name of the computer that this resource dispenser was created on |
| EndDateTime | DATETIME | The date and time the resource dispenser ended |
| EndTime | FLOAT | System time (in milliseconds) when the resource dispenser ended |
| MaxAllocTime | FLOAT | Maximum time used |
| MinAllocTime | FLOAT | Minimum time used |
| NumAllocations | INT | Number of allocations |
| ObjectID | FLOAT | Instance ID of the component |
| PackageName | VARCHAR(225) | The MTS package/COM+ application name |
| ResourceID | INT | Reference to the component instance |
| ResType | VARCHAR(225) | Resource dispenser type |
| StartAllocTime | FLOAT | The time at which the resource dispenser became active |
| TotalAllocTime | FLOAT | The total time that the resource dispenser was active |
| UniqueGuid | CHAR(40) | Unique identifier to link instances of activities, transactions, objects and methods |

Table A-6 ResourceObj Log File

The ActtxnObj Log File

The ActtxnObj log file contains records that can be used to reconstruct the Activities and Transactions. Each record contains a UniqueGuid, ActivityGuid, and the begin and end times of the Activity. This UniqueGuid is also recorded in the TxnObj, ObjectObj, MethodObj, and ResourceObj log files.

| ActtxnObj | | |
|---------------|--------------|---|
| Column | Datatype | Description |
| ActivityGuid | CHAR(40) | MTS/COM+ activity GUID of the activity that started the transaction |
| BeginDateTime | DATETIME | The date and time the transaction started |
| BeginTime | FLOAT | System time (in milliseconds) when the transaction started |
| ChkPtRecordID | CHAR(40) | Indicates that this record is part of a ChkPt dump, as well as the dump that it is associated with |
| ComputerName | VARCHAR(225) | The name of the computer that this was created on |
| EndDateTime | DATETIME | The date and time the transaction ended |
| EndTime | FLOAT | System time (in milliseconds) when the transaction ended |
| FirstMethod | INT | Internal use only |
| FirstObject | VARCHAR(255) | Internal use only |
| ObjectID | FLOAT | Instance ID of the component |
| PackageGuid | CHAR(40) | The MTS package/COM+ application GUID |
| PackageName | VARCHAR(225) | The MTS package/COM+ application name |
| StartTxnPoint | INT | Internal use only |
| TsidProp | CHAR(40) | Internal use only |
| TxnGuidProp | CHAR(40) | The DTC Transaction Guid |
| UniqueGuid | CHAR(40) | Unique identifier to link instances of activities, transactions, objects and methods |
| UsesDTC | BOOLEAN | Indicates whether this transaction was part of a DTC transaction: 1=DTC transaction 0=Not DTC transaction |

Table A-7 ActtxnObj Log File

Checkpoint Records and Checkpoint Ids

During normal operation, many log records are generated. For TransactionAbort and PackageCrash error conditions, AppMetrics generates special records called Checkpoint records. These records are the same as other records, except that their GeneratedChkPtID value is non-NULL. The date and time, system time (in milliseconds), CrashType, and GeneratedChkPtID are also written to the ChkPt log file.

In addition to indicating which Transactions abort and which Packages crash, it also reports all the activities, transactions, components, methods, and resource dispensers that were active at the time of the error. The ChkPtRecordID in the ActtxnObj log file contains the same GeneratedChkPtID that was generated at the time of the error. The UniqueGuid in the ActtxnObj log file can then be used to find all entities that were active.

| ChkPt | | |
|------------------|--------------|---|
| Columns | Datatype | Description |
| BeginDateTime | DATETIME | The date and time when the error occurred |
| BeginTime | FLOAT | System time (in milliseconds) when the error occurred |
| ComputerName | VARCHAR(255) | The name of the computer where the error occurred |
| CrashType | INT | 1=Transaction Abort 2=Package Crash |
| GeneratedChkPtID | CHAR(40) | ID of the ChkPt record that is generated for PackageActivations that crash or Transactions that abort |

Table A-8 Checkpoint Records

SQL Table Definitions for Diagnostics Template Log Files

The following table definitions show SQL syntax that is used to create a relational database with the data gathered via the monitors.

```
CREATE TABLE [ActivityObj] (
  [Aborted] bit NULL,
  [ActivityGuid] char (40) PRIMARY KEY,
  [BeginDateTime] datetime NULL,
  [BeginTime] float NULL,
  [ComputerName] varchar (255) NULL,
  [EndDateTime] datetime NULL,
  [EndTime] float NULL,
  [FirstIID] char (40) NULL,
  [FirstMethod] int NULL,
  [FirstObject] varchar (255) NULL,
  [IsDotNetObj] bit NULL,
  [NumActivities] int NULL,
  [PackageGuid] char (40) NULL,
  [PackageName] varchar (255) NULL,
  [ThreadId] int NULL,
  [UserName] varchar (255) NULL)
```

```
CREATE TABLE [ActtxnObj] (
  [ActivityGuid] char (40),
  [BeginDateTime] datetime NULL,
  [BeginTime] float NULL,
  [ChkPtRecordID] char(40) NULL,
  [ComputerName] varchar (255) NULL,
  [EndDateTime] datetime NULL,
  [EndTime] float NULL,
  [FirstMethod] int NULL,
  [FirstObject] varchar (255) NULL,
  [ObjectID] float NULL,
  [PackageGuid] char (40) NULL,
  [PackageName] varchar (255) NULL,
  [StartTxnPoint] int NULL,
  [TsidProp] char (40) NULL,
  [TxnGuidProp] char (40) NULL,
  [UniqueGuid] char (40),
  [UsesDTC] bit NULL)
```

```
CREATE TABLE [ChkPt] (
  [BeginDateTime] datetime NULL,
  [BeginTime] float NULL,
  [ComputerName] varchar (255) NULL,
  [CrashType] int NULL,
  [GeneratedChkPtID] char (40) PRIMARY KEY)
```

```
CREATE TABLE [MethodObj] (
  [ApplicationName] char(255) NULL,
  [BeginDateTime] datetime NULL,
  [BeginTime] float NULL,
```

```
[ComputerName] varchar (255) NULL,  
[EndDateTime] datetime NULL,  
[EndTime] float NULL,  
[Errstatus] int NULL,  
[MethodID] int NULL,  
[MethodIID] char (40) NULL,  
[MethodName] varchar (255) NULL,  
[ObjectID] float NULL,  
[UniqueGuid] char (40),  
[Valid] int NULL)
```

```
CREATE TABLE [ObjectObj] (  
[Aborted] bit NULL,  
[ActivityGuid] char (40) NULL,  
[BeginDateTime] datetime NULL,  
[BeginTime] float NULL,  
[ClientIP] char(15), NULL,  
[clsid] varchar(255) NULL,  
[Completed] bit NULL,  
[ComputerName] varchar (255) NULL,  
[ContextID] float NULL,  
[CreatedTsidObj] int NULL,  
[EndDateTime] datetime NULL,  
[EndTime] float NULL,  
[ErrID] char (40) NULL,  
[ErrMethod] int NULL,  
[Errstatus] int NULL,  
[FirstIID] char (40) NULL,  
[FirstMethod] int NULL,  
[IsFirstObject] bit NULL,  
[MethodExcept] int NULL,  
[NumResCreated] int NULL,  
[NumResUsed] int NULL,  
[ObjectID] float,  
[PackageGuid] char (40) NULL,  
[PackageName] varchar (255) NULL,  
[ServerIP] char (15) NULL,  
[TotalResourceUsageTime] float NULL,  
[TsidProp] char (40) NULL,  
[TxnGuidProp] char (40) NULL,  
[UniqueGuid] char (40),  
[URL] [varchar] (1024) NULL)
```

```
CREATE TABLE [PackageObj] (  
[BeginDateTime] datetime NULL,  
[BeginTime] float NULL,  
[ChkPtRecordID] char (40) NULL,  
[ComputerName] varchar (255) NULL,  
[EndDateTime] datetime NULL,  
[EndTime] float NULL,  
[GeneratedChkPtID] char(40) NULL,  
[PackageGuid] char (40),  
[PackageName] varchar (255) NULL,  
[ProcessID] char (40) NULL,  
[ShutdownReason] int NULL)
```

```
CREATE TABLE [ResourceObj] (  
  [ActivityGuid] char (40) NULL,  
  [BeginDateTime] datetime NULL,  
  [BeginTime] float NULL,  
  [ComputerName] varchar (255) NULL,  
  [EndDateTime] datetime NULL,  
  [EndTime] float NULL,  
  [MaxAllocTime] float NULL,  
  [MinAllocTime] float NULL,  
  [NumAllocations] int NULL,  
  [ObjectID] float NULL,  
  [PackageName] varchar (255) NULL,  
  [ResourceID] int,  
  [ResType] varchar (255) NULL,  
  [StartAllocTime] float NULL,  
  [TotalAllocTime] float NULL,  
  [UniqueGuid] char (40))  
  
CREATE TABLE [TxnObj] (  
  [ActivityGuid] char (40) NULL,  
  [BeginDateTime] datetime NULL,  
  [BeginTime] float NULL,  
  [ChkPtRecordID] char(40) NULL,  
  [ComputerName] varchar (255) NULL,  
  [EndDateTime] datetime NULL,  
  [EndTime] float NULL,  
  [GeneratedChkPtID] char(40) NULL,  
  [ObjectID] float NULL,  
  [PackageGuid] char (40) NULL,  
  [PackageName] varchar (255) NULL,  
  [TsidProp] varchar (255) NULL,  
  [TxnGuidProp] char (40) PRIMARY KEY,  
  [TxnStateProp] int NULL,  
  [UniqueGuid] char (40))
```

Figure A-1 SQL Table Definitions for Diagnostics